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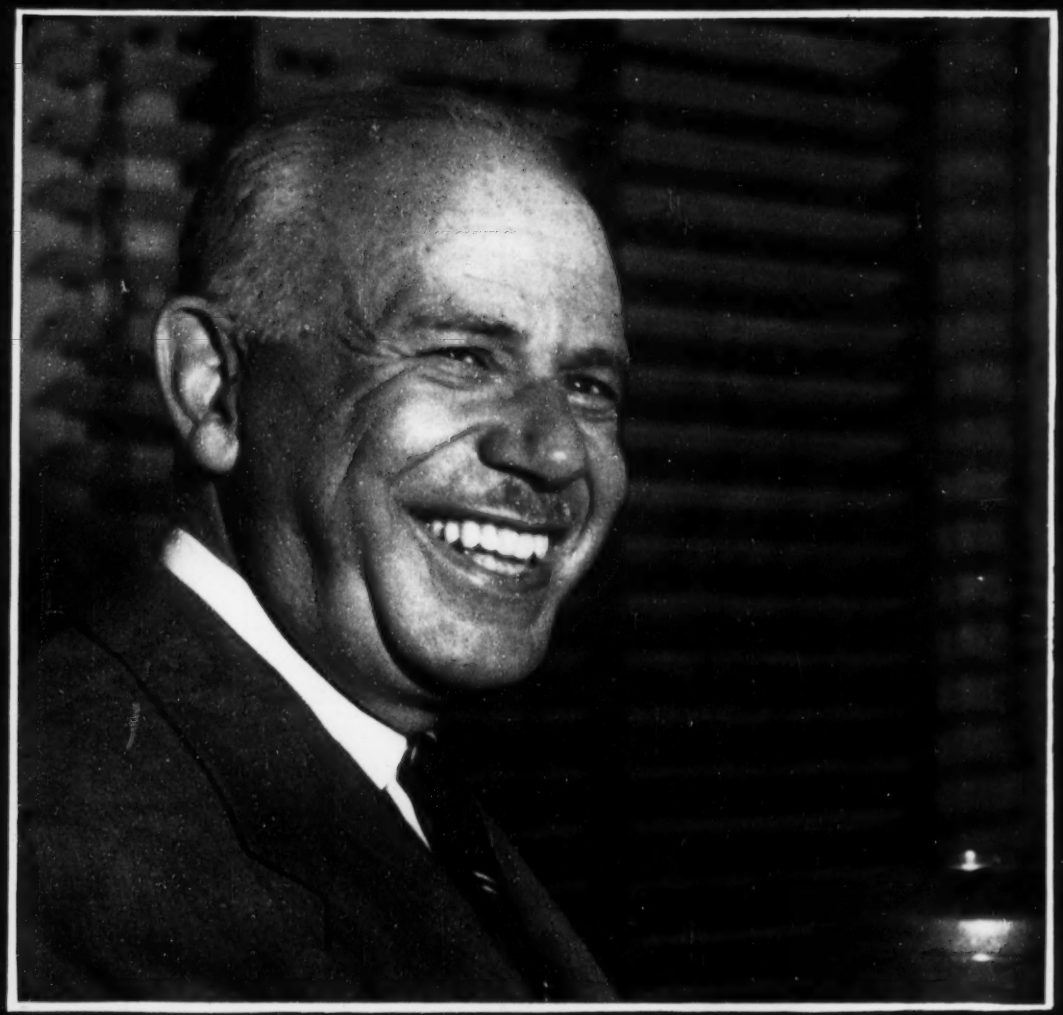

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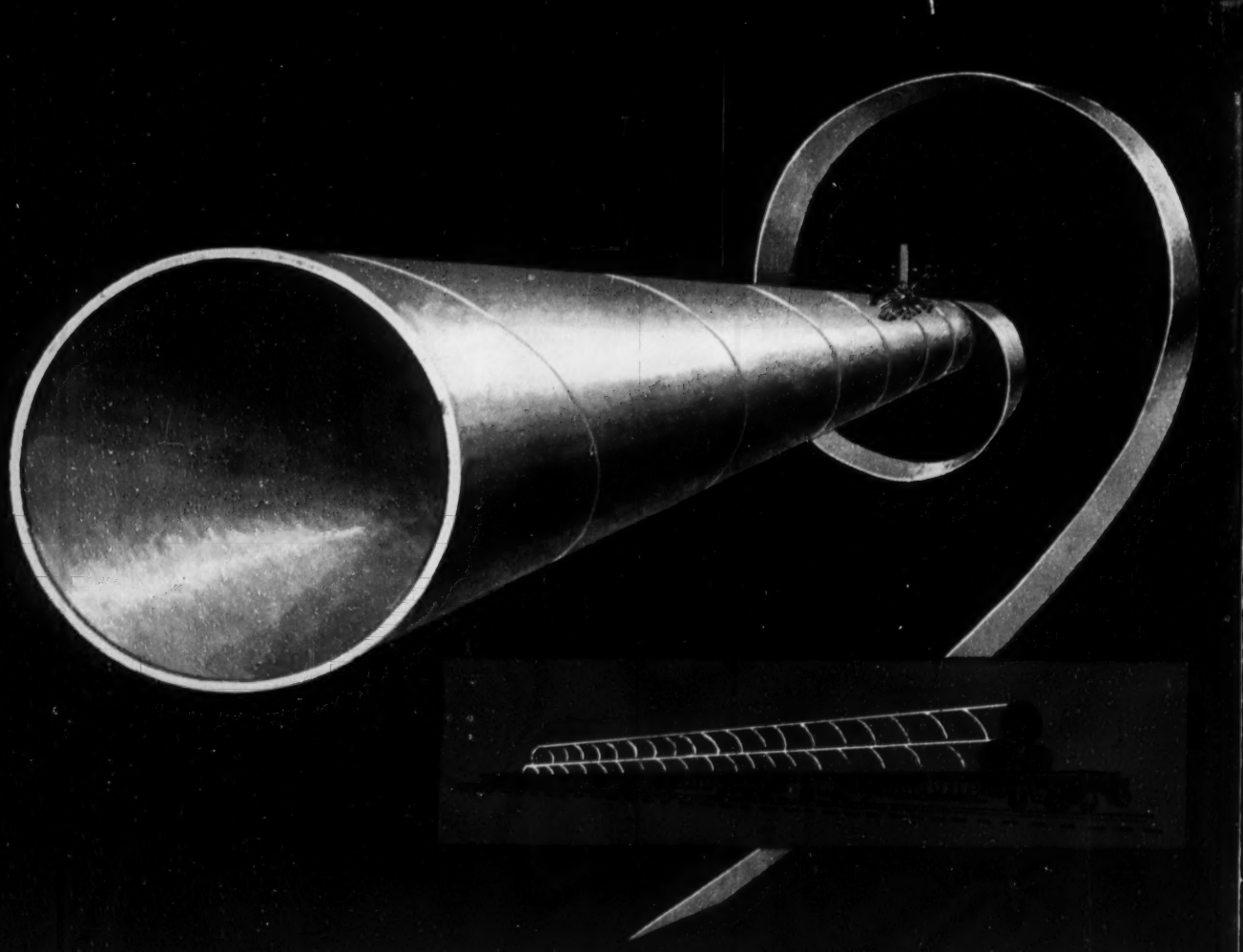

This longer pipe makes shorter work

Probably the longest continuous pipe piles ever made were those shipped to the Straits of Mackinac Bridge project, which will link Michigan's two great peninsulas. They were 93-foot sections of Armco Spiral Welded Pipe.

Not many years ago piling and pipe line contractors had to work with comparatively short length pipe. This meant they had more pieces to haul and handle, and more splicing to do at the job site. Then Armco engineers developed and perfected pipe machines that would automatically convert coils of steel into pipe of any desired length. After being spirally wound and welded into a continuous tube, the pipe was cut to the customer's specific length requirements. Pipe lengths of 50 feet and more became common. Installation was easier.

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Armco Spiral Welded Pipe is just one of more than 20 construction products developed by Armco to meet specific needs. Today, such service-proved Armco Products as corrugated metal drainage structures, water control gates, bin-type retaining walls, beam-type guardrail, steel buildings, and many others are available from conveniently located plants and sales offices throughout North America. Each product is backed by almost 50 years of research and experience in making and fabricating steel. Helpful, authoritative data are yours for the asking. Write us about *your* drainage or construction problem.

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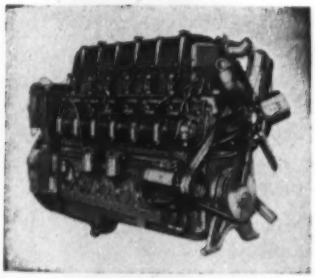

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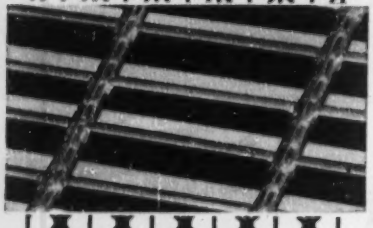

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CONTENTS ON PAGE 17

Waldo G. Bowman
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Publisher

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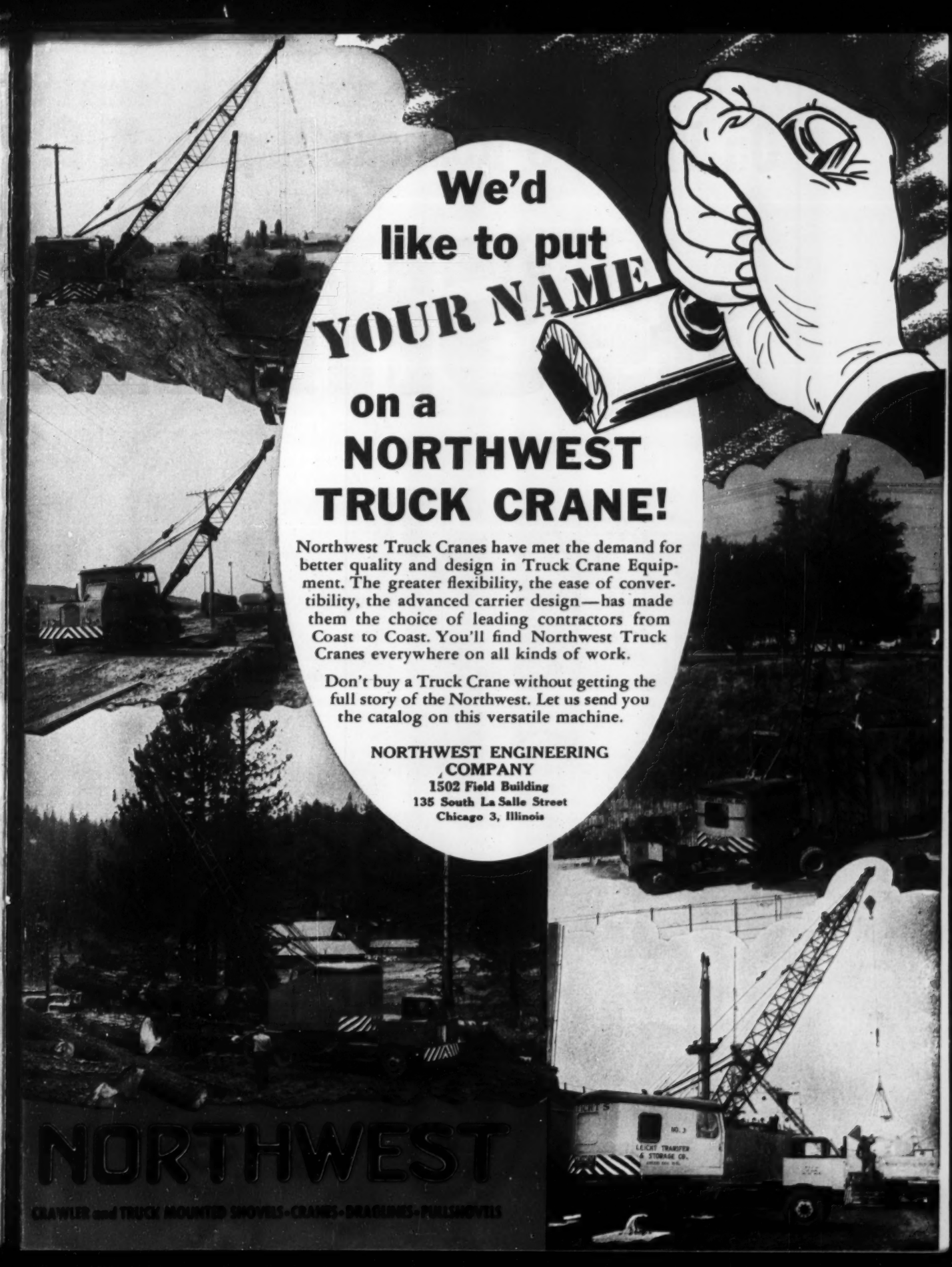
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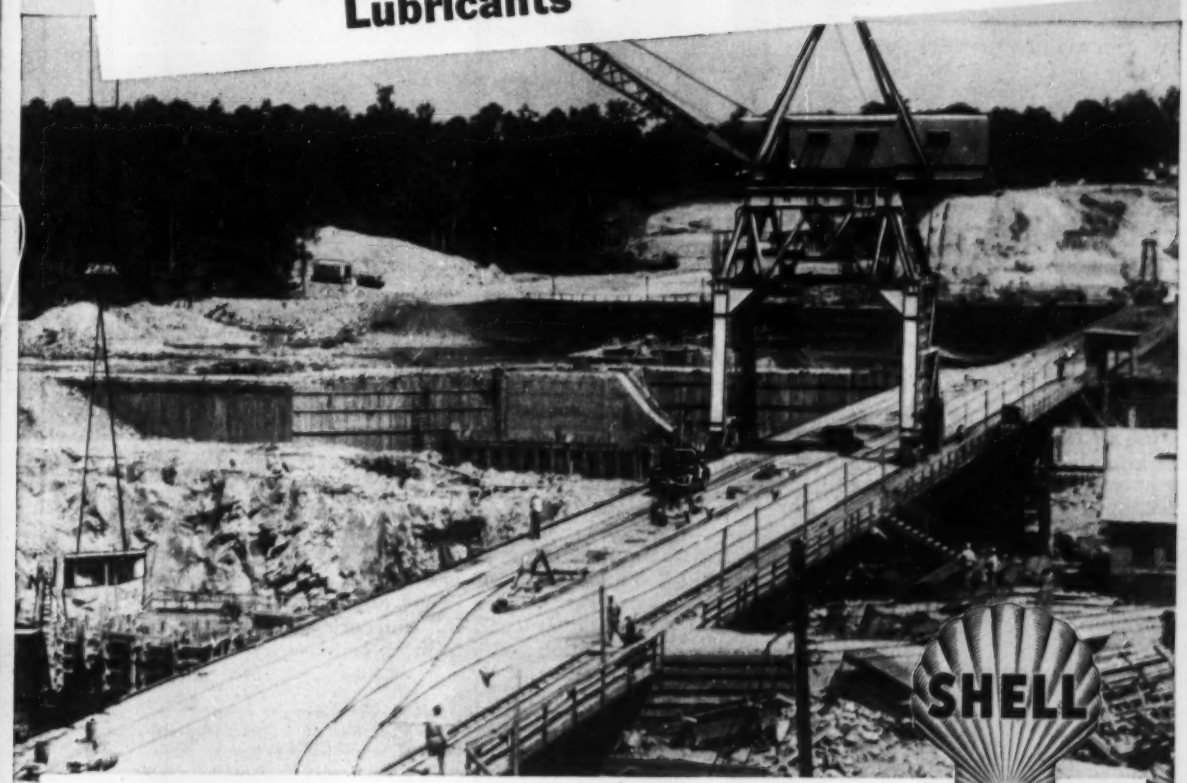

The Roanoke Rapids Project for the Virginia Electric and Power Company, being constructed by Stone & Webster Engineering Corporation, is going full speed ahead. This extensive job keeps hundreds of pieces of heavy construction equipment busy, day and night. Nearly 100% of this equipment relies on Shell Industrial Lubricants and Fuels to meet the rigorous operating conditions.

When completed, Roanoke Rapids project will supply 100,000 kilowatts of electricity for Vepco's system.

Widely used in construction work and wherever heavy duty equipment operates, Shell lubricants protect machinery and at the same time keep maintenance costs at rock bottom. Perhaps it will pay *you* to look into the savings of a 100% Shell program.

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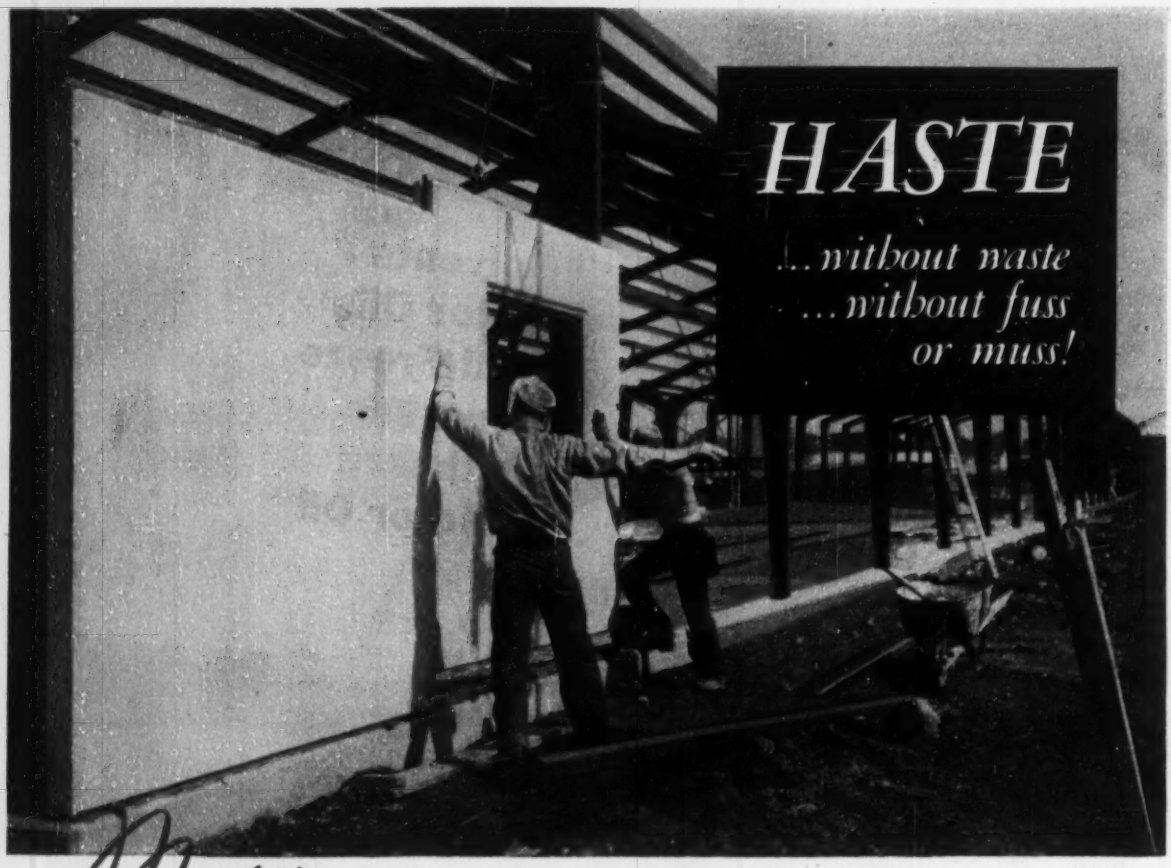
*A diligent search could uncover only one piece of Vepco's equipment NOT using a Shell product.



Marietta precast insulated concrete wall panels

. . . the amazing new functional wall panels that bolt into place . . . quickly . . . easily . . . allowing even the largest structures to be closed in with unprecedented speed as high as 4200 sq. ft. each 8 hour day . . . and at great savings too; for the use of Marietta Wall Panels for curtain wall construction not only saves as much as 50% in time, but savings of closing-in costs, in comparison with conventional masonry walls!

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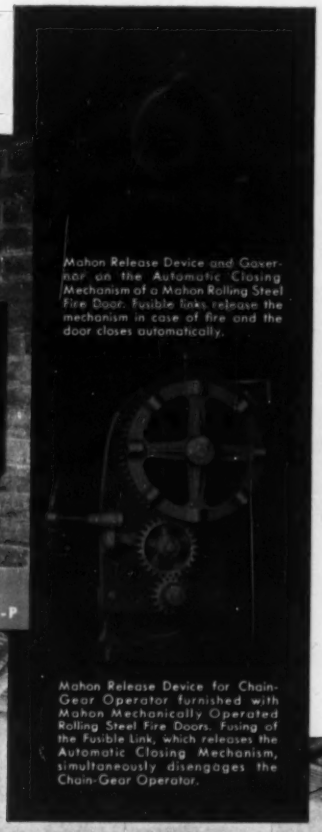

Mahon Release Device and Governor on the Automatic Closing Mechanism of a Mahon Rolling Steel Fire Door. Fusible links release the mechanism in case of fire and the door closes automatically.

Mahon Release Device for Chain-Gear Operator furnished with Mahon Mechanically Operated Rolling Steel Fire Doors. Fusing of the Fusible Link, which releases the Automatic Closing Mechanism, simultaneously disengages the Chain-Gear Operator.

No other type of door offers the space saving advantages of a good rolling steel door. This is true even in a dividing fire wall such as the installation shown below. In this particular fire wall, between an enclosed loading area and a large food warehouse, eighteen Mahon Underwriters' Labeled Automatic Rolling Steel Fire Doors are installed in truck loading openings at close interval. In general daily service, the vertical roll-up action of these doors occupies no usable space on either side of the openings . . . merchandise can be stacked within a few inches of the door curtain. If a flash fire should occur while the doors are open—either in the warehouse or the truck loading area—the automatic closing mechanism will be released and the doors will close automatically shutting off draft and preventing spread of the fire through door openings. Mahon Underwriters' Labeled Automatic Fire Doors are available for all Underwriters' opening classifications . . . these Labeled doors can be furnished with either chain-gear or crank-gear operators. Mahon Automatic Fire Doors can also be built in strict accordance with the Underwriters' Specifications and furnished with Electric Power Operators for openings where the combined features of power operation in general service and automatic closing in case of fire are required. See Sweet's Files for the complete line of Mahon Standard and Underwriters' Labeled Rolling Steel Doors. Check Mahon Specifications carefully . . . you will find extra-value features in design of operators and other mechanical devices as well as in bearings and other materials used. If Sweet's is not available to you, write for Catalog No. G-55.

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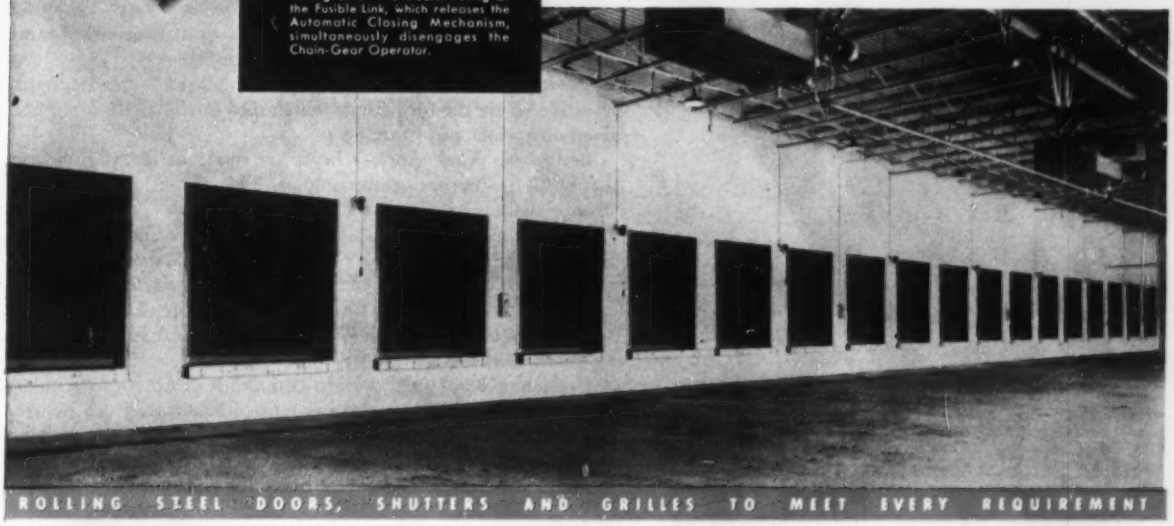
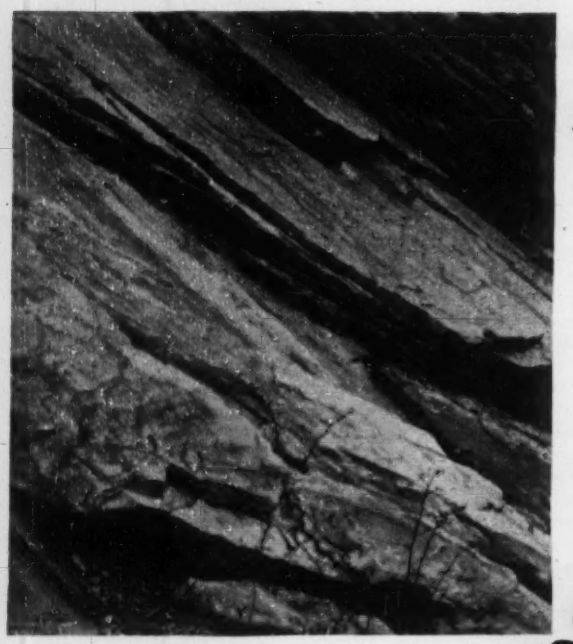


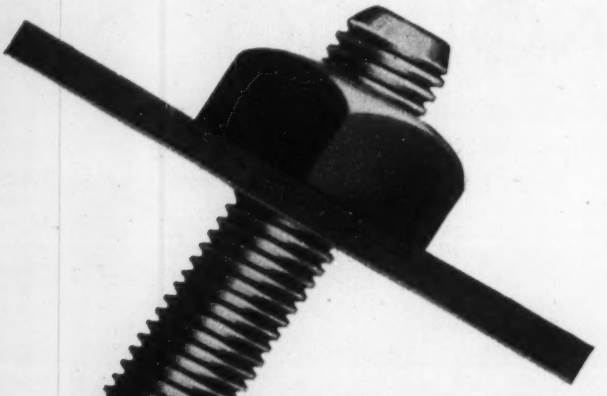
ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Eighteen Mahon Underwriters' Labeled Rolling Steel Fire Doors installed in a new Big Bear Warehouse, Detroit, Michigan. In addition to the fire doors, Two Mahon Power Operated Rolling Steel Doors and Three Mechanically Operated Rolling Steel Doors were installed in other openings of this modern building. T. Rogvoy, Architect. Barton-Malow Co., Gen. Contrs.

MAHON



To reduce the danger from slides, rock formations like this can be bolted economically with Bethlehem Rock Anchor Bolts.



Worried About Rock Slides?

Many a rock slide can be prevented by using Bethlehem Rock Anchor Bolts at potential danger points.

Bethlehem Rock Anchor Bolts minimize the danger of rock slides because they reinforce the rock formation, preventing boulders or layers of rock from sliding or falling. They are ideal to use in cuts with high banks, or in steep hillsides, and are highly effective where the formations which they anchor in turn support overlying strata and earth.

Bethlehem Rock Anchor Bolts are made in lengths of from 2 ft to 10 ft. One end of the bolt has 5 in. of 1-in. rolled threads. The opposite end contains a 6-in. forged slot.

In installing the bolt, a 1¼-in. diam hole is drilled about 3 in. less than the length of the bolt. A wedge is started in the slot, then the bolt is inserted in the hole, after which it is driven to refusal. A dolly protects threads from damage. Driving action forces wedge deep into slot, spreading bolt-end so that it locks against sides of hole.

Bethlehem Rock Anchor Bolts come with an American Standard square nut. Depending upon the type of strata, they can be used in combination with rock-anchor plates or ties, or angle washers.

We have an interesting two-color booklet on rock anchor bolts. Write to the nearest Bethlehem office for your copy.

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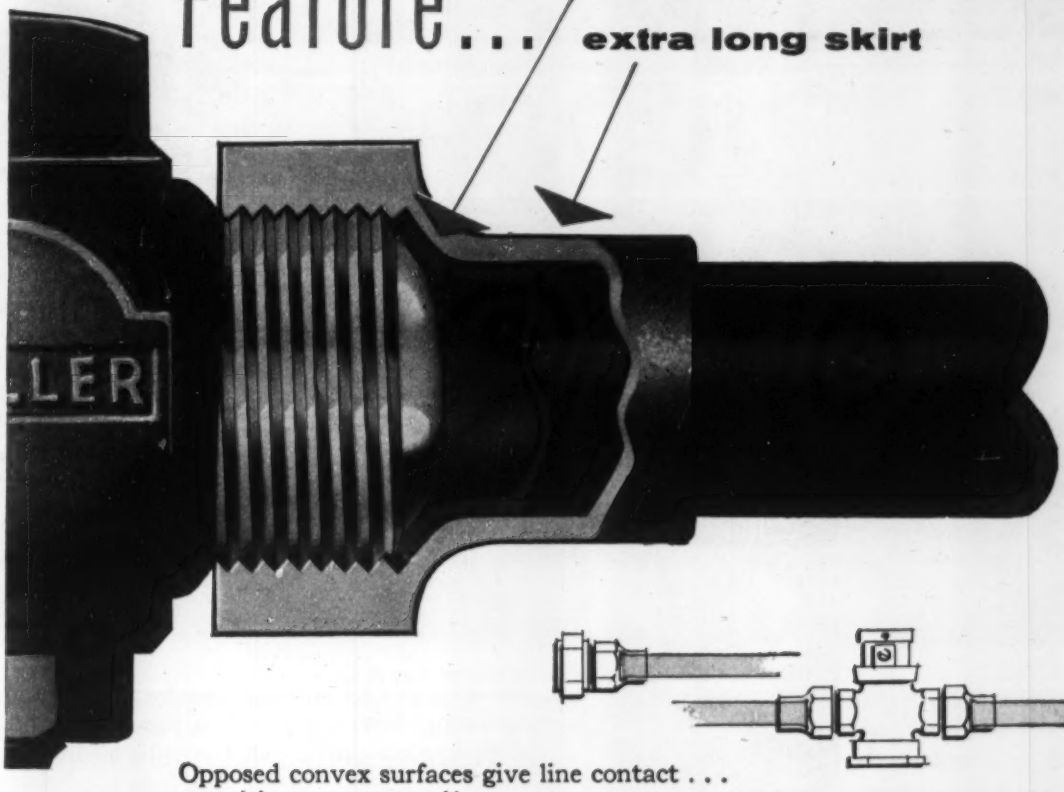
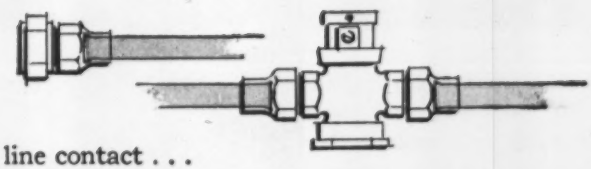
feature . . . **opposed convex surfaces**

extra long skirt





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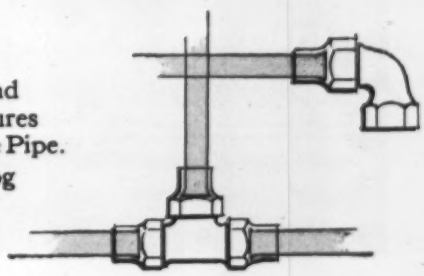

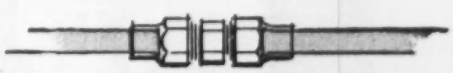

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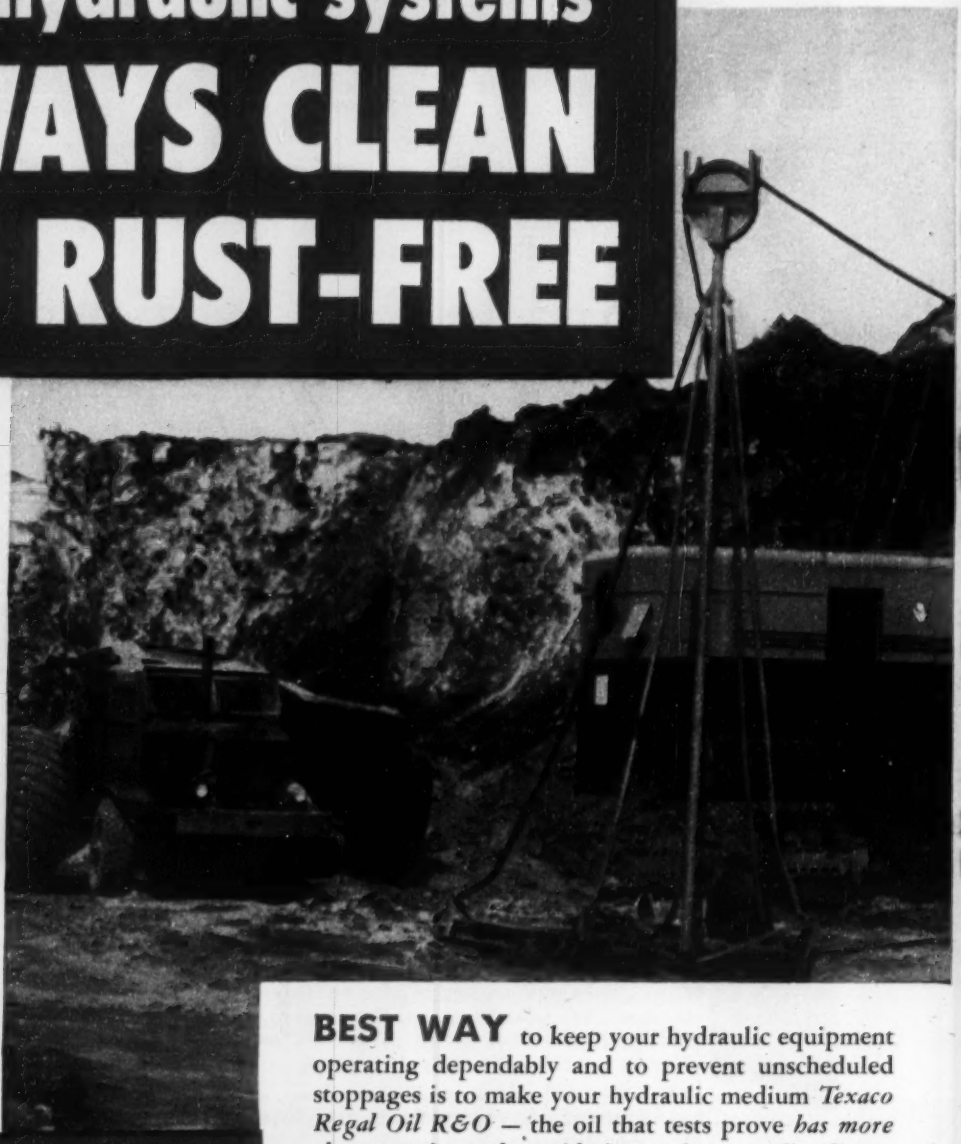

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should use a rust- and oxidation-inhibited oil . . . I have yet to see one of our units in which *Texaco Regal Oil R&O* has been used that wasn't clean, free from rust and sludge — with pump parts, piping, controls all in A-1 condition."

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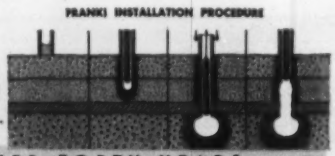
FRANKI INSTALLATION PROCEDURE



FIRM FOUNDATIONS FOR OVER FORTY YEARS 807

READER COMMENT

Addendum

SIR: In your article "Engineers in Soil Mechanics for the World" (ENR Oct. 25 p. 30) an unfortunate example of needed soil mechanics studies which are not being pursued has been chosen. On page 37 the article states ". . . some basic problems in soil mechanics have been neglected. For example: . . . there are no attempts being made to determine actual stress distribution in soil loaded externally."

For some time the Corps of Engineers, U. S. Army, has been conducting a research program concerned with the distribution of stresses in soil masses. The Waterways Experiment Station has been actively carrying out this program since 1946.

Results have been published as Waterways Experiment Station Technical Memorandum 3-323, Report No. 1, entitled "Homogeneous Clayey-silt Test Section." This report is available for purchase ($2.00) or through interlibrary loan from the library at the Waterways Experiment Station. A description of the project together with selected pertinent results has appeared as Highway Research Board Research Report No. 12-F, and has also appeared in the 1951 Highway Research Board Proceedings (volume 30). Both references include comparisons of stresses derived using Boussinesq's theory with stresses measured directly within a homogeneous mass of soil externally loaded.

RICHARD G. AHLVIN
Waterways Experiment Station, Vicksburg, Miss.

Help available

SIR: Some time ago I read in ENR of two mid-western states whose highway administrations are trying to alleviate the shortage of engineers by using Central and South American engineers, and that they are having difficulty in securing sufficient talent from those countries.

I believe there are a number of capable highway engineers in Europe who would welcome a chance to work in America on such a basis. Furthermore, many can be spared, because in some countries there is a surplus of engineers, in that there are more than the economy of the nations can utilize.

I shall be glad to help interested American administrators to institute such arrangements in Europe.

JOHN J. O'MARA.

(*Continued on page 15*)

CUT LOADING COSTS WITH FAST-RUGGED EIMCO'S

Yes! You cut costs when you use Eimcos for loading.

NOTE these advantages:—

Advantage: Eimcos dig and load materials that are difficult or impossible for other loading equipment.

Reason: Eimcos are designed for tough jobs — digging and loading rough, broken rock. Tracks are designed to oscillate freely even with the loader attachment. The bucket design permits digging in frozen stock piles, rough bottoms, heavy ores and in sticky clay or unbroken conglomerate.

Advantage: Eimcos are more maneuverable.

Reason: Eimcos use independent track control. Separate levers control each track and one track can be run forward while the other runs reverse.

Advantage: Eimcos last longer.

Reason: Torque converter drive is standard on Eimcos. All castings are alloy steel, all construction is extra heavy-duty.

Advantage: Eimcos load faster.

Reason: The overhead principle developed by Eimco is faster. Complete cycle is 10-12 seconds. Shifting from high to low on tractor or loader is done in motion. Shifting from forward to reverse can be done at full speed.

Other Advantages Include: Better visibility with the operator up front. Easier maintenance with clutches that never need adjustment and elimination of all clutches, brakes and gadgets in the final drive.

Let an Eimco engineer show you how you can cut loading costs on the next job.

Eimco 105 with bulldozer attachment

Eimco 105

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Designed in accordance with specifications adopted by A. I. S. I. for light gauge structures, dated January, 1941.

DESCRIPTION

METAL THICKNESS: 18, 20, or 22-Gauge Cop-R-Loy Steel sheets.

FINISH: Zinc chromate iron oxide primer coat baked on after fabrication.

LENGTHS: up to and including 22 feet, 6 inches.

WIDTH: 18 inches.

PANEL WEIGHT: 50 to 67 lbs., depending upon size of panel.

RIB DEPTHS: 1½″, 1¾″, 2″, 2½″, spaced 6″ on centers.

DEAD WEIGHT: 8 to 10 lbs. per sq. ft. when insulated with built-up roofing.

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READER COMMENT

[EDITOR'S NOTE: Mr. O'Mara is on leave from the University of Iowa for work with the Joint Construction Agency in Europe. His address is c/o NEDE-JCA, APO 83, New York, N. Y.]

Use costs with care

SIR: One may well ask the question: "Which page of the October 7, NEWS-RECORD do you read"?

	p. 211	p. 212
6-in. tilt-up wall	1.10	1.00
8-in. block wall	1.15	0.72
8-in. poured-in-place wall	1.50	2.70

Relying on your data, I might tell my client that poured concrete walls cost 30% more than block, or I might say the poured wall cost 275% more. This is a confirmation of something I have long suspected: Published unit cost data can only be used safely by one who knows as much about the subject as the author of the publication.

JOHN CASE
Structural Engineer
Los Angeles, Calif.

[EDITOR'S NOTE—Unit cost data should indeed be applied with good engineering judgment. The data on p. 211 are contractor's prices, whereas those on p. 212 are engineers' estimates of costs.]

CALENDAR

Building Research Institute, research conference on modular measure, National Academy of Sciences, Washington, D. C., Dec. 9.

American Road Builders' Association, convention, Roosevelt Hotel, New Orleans, Jan. 10-13.

National Association of Home Builders, convention, Conrad Hilton Hotel, Chicago, Jan. 16-20.

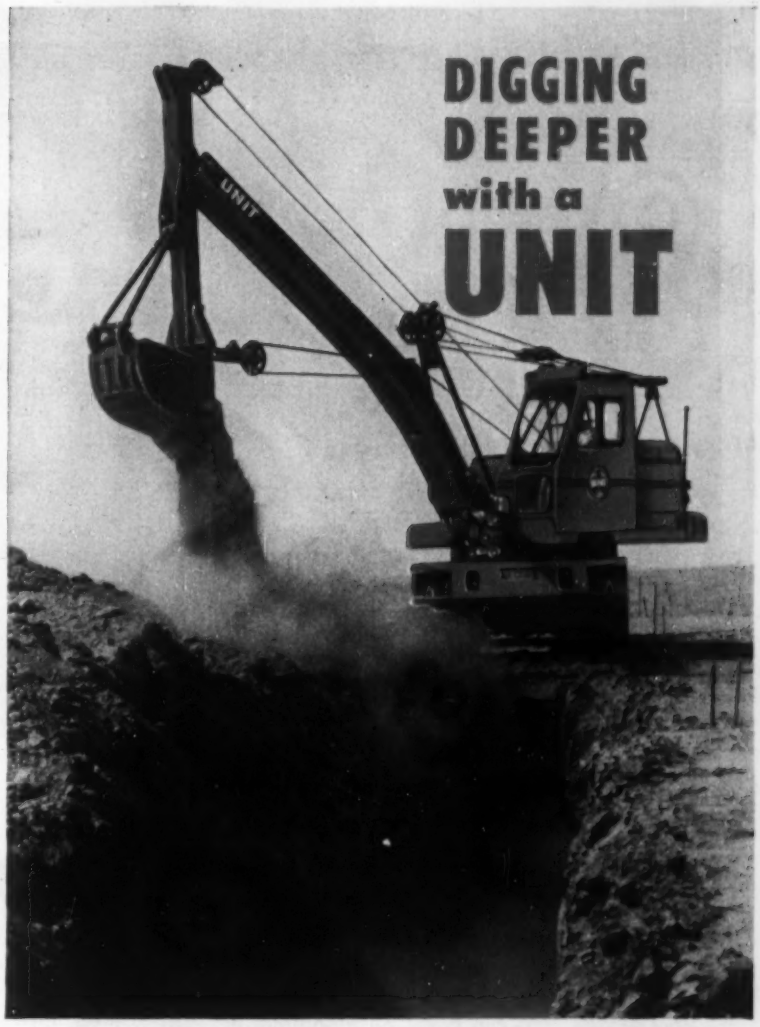
Engineers Joint Council, general assembly, Hotel Statler, New York City, Jan. 21.

Associated Equipment Distributors, annual meeting, Conrad Hilton Hotel, Chicago, Jan. 23-27.

Mason Contractors Association of America, annual convention, Jefferson Hotel, St. Louis, Jan. 30-Feb. 2.

Annual Highway Engineering Conference of the University of Colorado, Boulder, Feb. 24-25.

Concrete Contractor's Association of Greater Chicago, Mid-West Concrete Exposition, Navy Pier, Chicago, Feb. 24-26.



You'll Dig More Jobs At More Profit With A UNIT TRENCHOE!

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UNIT models are available in ½ or ¾ yard Excavators . . . Cranes up to 20 tons capacity . . . Crawler or Mobile types . . . Gasoline or Diesel. Ask for literature.

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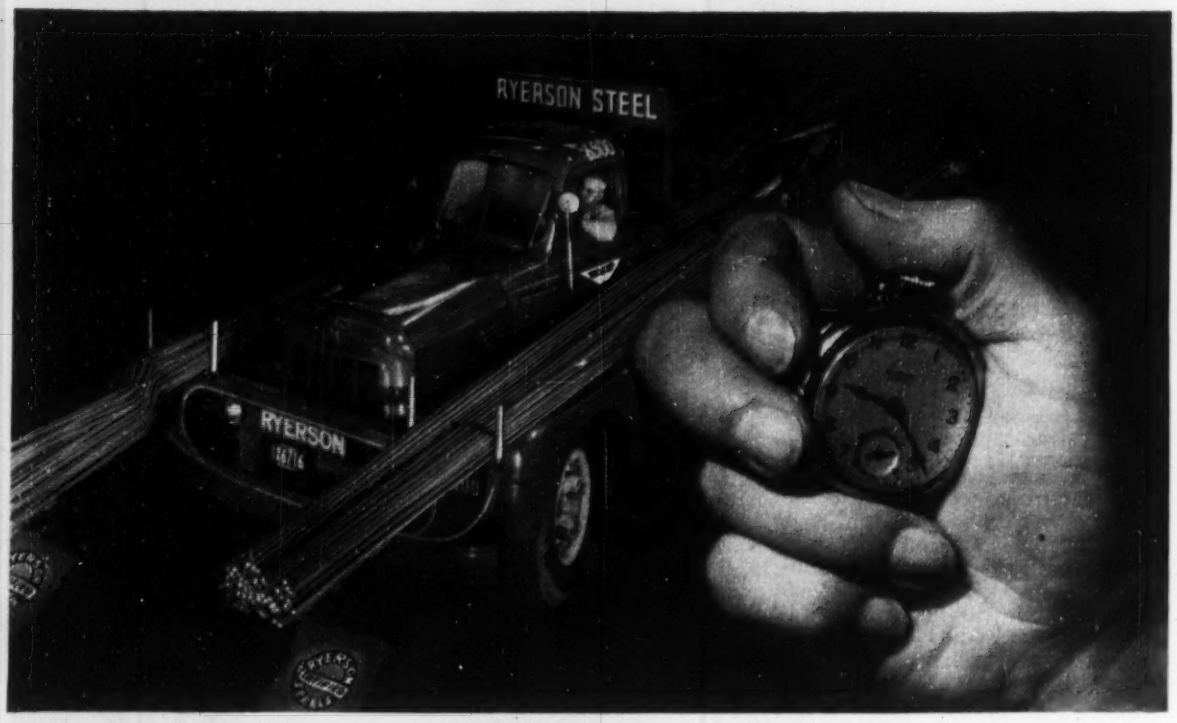

RE-BARS *at the hour promised*

Getting construction steel to you—*exactly* when you need it—is a specialty of Ryerson re-bar service. You can count on absolutely dependable deliveries because your nearby Ryerson plant has the world's largest steel stocks and the facilities to get out your requirements in a hurry when your job moves ahead of schedule. And we have the facilities to hold your ready steel here, rather than to pile it on your site. We work closely with you always—adjusting deliveries in accordance with the progress of your project.

You can be sure, too, of the quality of re-bars from Ryerson. All are hi-bond type, designed for greater grip and guaranteed to meet or exceed ASTM spec A305. They are delivered to you cut, bent and tagged—ready for immediate use. We also furnish wire mesh, structural steel, forms, floor plate, etc.

So, for every kind of high quality construction steel—dependable delivery—count on Ryerson. For your next job, call Ryerson now for lump sum or average pound prices.

PRINCIPAL PRODUCTS

CARBON STEEL BARS—Hot rolled & cold finished

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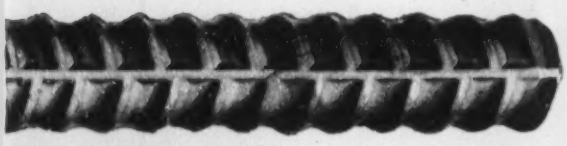
TUBING—Seamless & welded, mechanical & boiler tubes

STRUCTURALS — Channels, angles, beams, etc.

PLATES—Many types including Inland 4-Way Safety Plate

SHEETS—Hot & cold rolled, many types & coatings

MACHINERY & TOOLS—For metal fabrication



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ENGINEERING NEWS-RECORD

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CONTENTS

NATIONAL AFFAIRS

A New Set of Federal Construction Policies? 21
Senate Approves Lease-Purchase for 10 More Projects 22
Supreme Court Decision Aids Slum Fight 23
Hell's Canyon—Low-Level Dam Plan Gains Support .. 23
New Machine Speeds Large Bore Tunneling 24
Concrete in Buffalo Job Loses Strength With Age ... 25
Engineers, Crews Form AFL Union in Colorado 25
Bid Calls Due This Month for Two St. Lawrence Jobs 25
NSPE Asks Membership to Finance Headquarters 25
Foundation Mat Placed in 13-hr Pour 26
Mass. Turnpike Authority Opens First Bids Dec. 14 .. 26

FEATURES

Waste Works Points Way for an Industry 30
Ford Builds Largest Auto Assembly Plant 36
Old Dam Sports New Bridge 38

INTERNATIONAL

Colombia to Organize Its Own Small-Scale TVA 40
New Dam to Add Biggest Power Block to B. C. 42

NEW PRODUCTS

New Alicade Makes Plane-Tabling an Easy Task 44
Two New Sandwich Wall Panels Porcelain Enameled. 48
Publications 49

MEN AND JOBS

Fair of Harvard: Master of the House—and Much of What He Surveys 52

BUSINESS AND FINANCE

Prudential Sells Turnpike Bonds 79
Seasonal Decline Is Less Than Usual 79
Better Statistics from Commerce Dept 83
Toll Roads and Free Roads: Delaware's Traffic Problem 83
Activity This Week 84

LABOR

Wages, Termination Date Spur Kansas City Fight ... 86
NLRB Approves Job Hunting as Part of Union Strategy 86
Who's Going to Plumb What? 88

Reader Comment 12
Calendar 15
Washington Observer .. 19
City by City 27
Books 58
Obituaries 60
Construction Reports ... 62
Unit Prices 76
Editorials 100

THE CONSTRUCTION WEEK

WORD FLIGHT—Pennsylvania Turnpike Commission publicity men let themselves go completely to mark opening of the first 22-mi section of Ohio's 241-mi cross-state road.

Burbled the publicists (in an official news release): "The Pennsylvania and Ohio Turnpikes will enter a state of advantageous conjugation" when Ohio opens its first section.

What they meant was that the Ohio road was one of the first turnpikes planned to connect with an existing super road.

POLITICAL TRADE—Observers read politics with a strong Red tinge into those cement prices recently quoted on the Swiss market.

East-German (Red) Zone cement is selling in Zurich at the equivalent of $140 per 10 tons; while Swiss-made cement sells for $160 per 10 tons. What makes the East-German price even more astonishing is that freight charges alone (from the zone to Zurich), plus customs, amount to $170.

So the Reds are in fact throwing in the cement free, and taking a loss on freight charges.

SMOKELESS SMOKE?—Allegheny County Smoke Control Director Thomas C. Wurtz has a knotty problem in hand:

How to control smoke from a plant making smokeless fuel?

Residents of North Fayette Township complained to Wurtz that Pittsburgh Consolidation Coal Co.'s nearby plant is making too much smoke and soot.

The plant is engaged in the manufacture of smokeless fuel that can be burned in compliance with the county's smoke control laws.

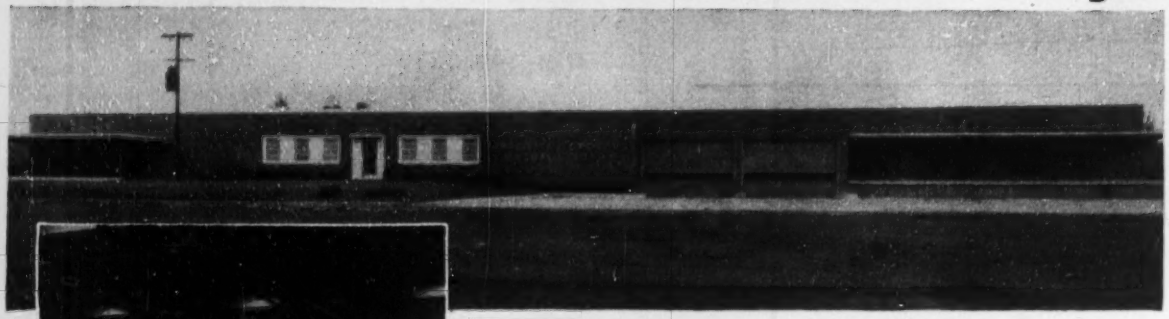
RIGHT AMOUNT?—Akron's Board of Education wants the common pleas court to tell it if a bid-bond $12.15 short of the required amount is ground for rejecting all bids.

Situation arose when Milletti Construction Co. of Akron submitted low bids on two school jobs totaling $1,011,443. The bid bond submitted (under a 5% bond requirement) was $50,560.

LONG LITIGATION—Fifty suits for property damages in connection with blasting operations for a road underpass in Buffalo, will have to be tried as separate actions, the state's Appellate Division has ruled.

Brunner Asphalt & Construction Co. and Edward A. Besch & Son, Buffalo contractors who are defendants, had asked consolidation of the suits in the interest of speed. The damage suits range from a few hundred to thousands of dollars, mostly for damage to homes.

Concrete Prefabrication Pays

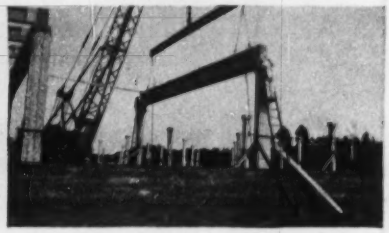


Charlotte Grocers Mutual Warehouse, 60,000 sq. ft. floor area, in "Acres for Industry" development, ten minutes from center of Charlotte, N. C.

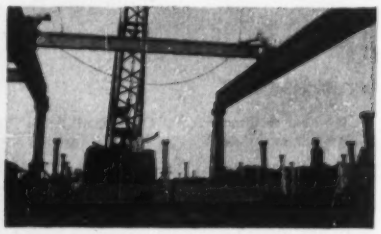
Concrete prefabrication is growing by leaps and bounds, thanks to the economies of prestressed concrete members. This well-designed warehouse has precast girders, purlins and roof planks, all prestressed, as well as precast columns, fabricated at assembly-line speed with 'Incor'* 24-Hour Cement.

Designed for the material and method, prefabrication resulted in lowest construction cost, for a structure embodying utmost fire-safety and durability, with minimum insurance rates and lowest upkeep. Advantages well worth considering. *Reg. U. S. Pat. Off.

'Incor' concrete columns, 14" x 14", with 20" x 20" capitals, were precast at job site. Poured in morning, stripped in afternoon—48 columns produced in 12 days.



42 prestressed 'Incor' girders, each 45' long, 30" deep, top flange 12" wide, bottom flange 20" wide, web 5" thick, were cured and stripped in less than 24 hours.



Precast, prestressed 'Incor' concrete purlins, I-shape, 8" wide top and bottom flanges, 3" web, 18" deep, 24' in length, with angles for welding to girders and columns.

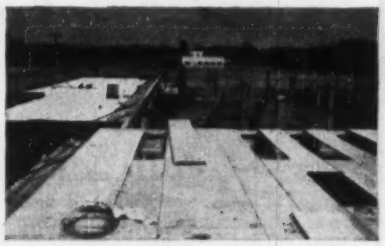
CHARLOTTE GROCERS MUTUAL WAREHOUSE
"Acres for Industry"
Charlotte, N. C.

General Contractor:
J. A. JONES CONSTRUCTION CO.

Architect & Engineer:
J. N. PEASE & CO.

Precast Structural Members and Roof Planks
Ready-Mix 'Incor' Concrete:
CONCRETE MATERIALS, INC.

—all of Charlotte, N. C.



Total of 60,000 sq. ft. precast roof planks, each 1¾" x 18" x 18 ft., were pretensioned at the casting plant. These planks butt together and have recesses for grouting.

At pretensioning bench, 'Incor' concrete produced stripping strengths in 18-24 hours, setting tempo of assembly-line operation as basis of substantial production economy.

LONE STAR CEMENTS COVER THE ENTIRE CONSTRUCTION FIELD

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LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 18 MODERN MILLS, 136,000,000 SACKS ANNUAL CAPACITY

WASHINGTON OBSERVER

Here's how GSA is thinking of placing contracts on lease-purchase buildings:

Now being finally approved by the Senate Public Works Committee (see page 22), policy won't be fixed until GSA is ready to start the first job—which should be within a week of the time the final approvals come through. **All architects in area of the project will get a questionnaire.** It will ask qualifications of the firm, and a list of buildings it has designed. **From these reply forms returned, GSA will pick firm to draw up plans** and specifications. (Brochures and similar volunteered data won't get consideration.) **Construction contractors will be invited to bid on these designs.** With bids in hand, GSA will seek competitive bids from potential investor-owners to get the best price. The construction contractor will deal with successful bidder for the building, but GSA—rather than the architect—will supervise construction.

•

You can now get FHA-mortgage insurance to build or re-build housing in slum areas. It gives the benefits of government guarantees and easy financing terms to owners of either individual dwellings, blocks of dwellings or apartment houses in blighted areas designed for urban renewal (see page 23). Up to now, there has been federal aid including grants to clear slum areas—but no federal guarantee for any private builder who wanted to build modern housing. Because of the risk involved in building in decaying areas without federal mortgage insurance, lenders would demand shorter-term loans and higher interest rates.

Regulations on this new program are now available at all 70 FHA offices.

•

Homebuilders associations are campaigning to have communities put in streets, water, sewerage and schools in new subdivision. Practice now is widespread to make builder—and hence the new home owner—pay the bill. This raises the price, makes houses harder to sell. Government officials doubt that the drive will get very far.

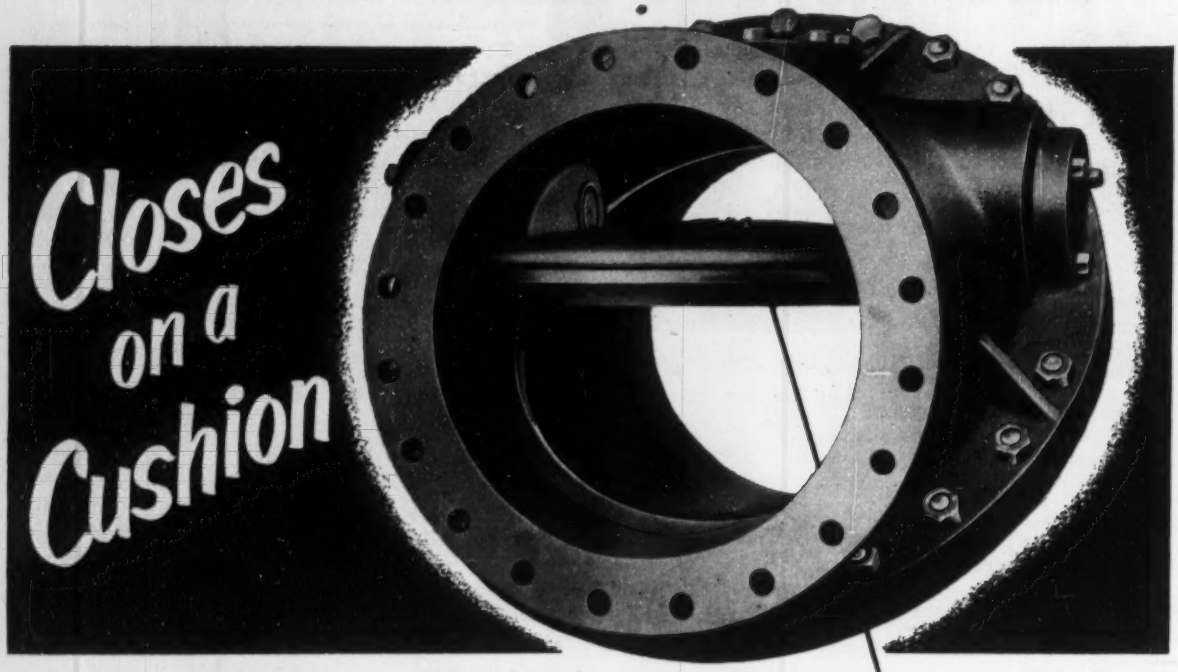
•

The first seven of 30 north Canada radar stations have been completed. They're part of the so-called "Distant Early Warning" (DEW) line in a fence some 3,000 mi long above the Arctic Circle. Total cost, to be borne by the U. S., is estimated to be about $250 million. First station was built on Barter Island off the coast of Alaska last year. Line is supposed to give U. S. and Canada as much as a six-hour warning of enemy bombers as they cross the polar ice cap.

•

Negotiations for sale of Central Valley project to California are continuing in Washington. Some stories have gotten around that indicate that the matter of price is about the only thing standing between Californians and the federal administrators. This isn't so. **Sec. McKay has reiterated there's no "For Sale" sign on the project.** All the department is doing is listening to the state's proposals. There are strong elements in California, too, who are against the purchase. **California's ideas on price don't jibe with Interior's.** Interior, for instance, says there's $54 million of flood control and fish and wild life features in the project; California says it amounts to $104 million—almost a $50-million price differential right there. There are other disagreements over what costs should be included in a purchase price that put the negotiators farther apart. **Biggest obstacle is still Congress.** Congressmen who would have most to say about such a sale are the very ones who are strongest against it.

Chapman's Tilting Disc Check Valve

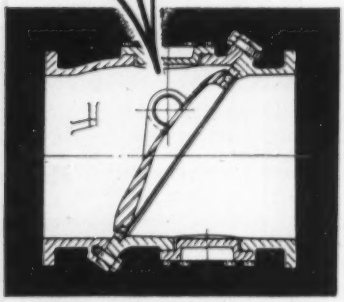


...for low cost, slam-free operation

Balanced pressures *cushion* the movement of the disc in Chapman's Tilting Disc Check Valve. The valve closes quickly but quietly, in all but unusual piping arrangements. There's no slamming to damage pipe-line joints or the valve itself. And *drop-tight* closure eliminates sliding wear on the disc and seat.

In the open position, the "airfoil" designed disc rides firmly against stops, without swinging or fluttering. That's why the hardened extra-large hinge pins give extremely long wear. And the absence of turbulence is one reason why head loss through Chapman's Tilting Disc Check Valve is lower than through any other type of check valve.

Low head loss, increased wear resistance and freedom from destructive slamming make Chapman's Tilting Disc Check Valves unbeatable for almost every installation. Write for Catalog No. 30 today.

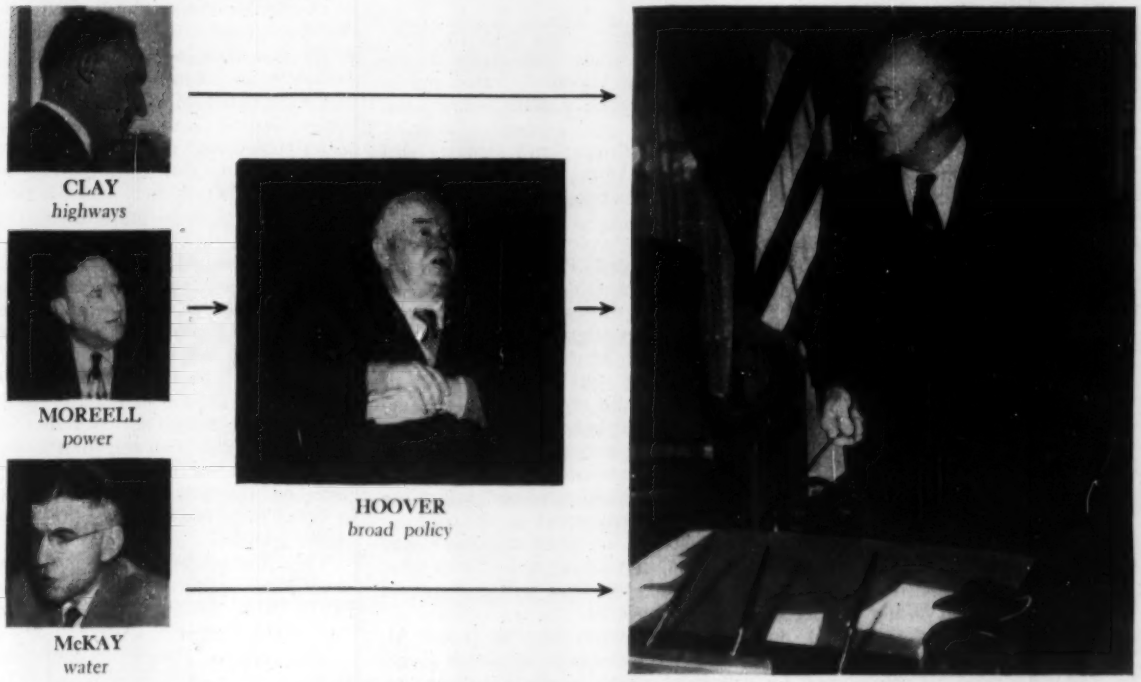


Here's why
CHAPMAN Tilting Disc Check Valves
***Keep Quiet* All Their Lives**

This specially designed "airfoil" disc balances perfectly in open position . . . then drops easily to closed position (cushioned by the flow). No jarring or slamming, in usual pipe-layouts. Write for bulletin.

THE CHAPMAN VALVE MANUFACTURING COMPANY
INDIAN ORCHARD, MASSACHUSETTS

Will their reports bring . . .



A New Set of Federal Construction Policies?

The White House this week began to reap the fruits of long-range planning. The first of an impressive series of major policy reports was in the President's hands. These reports will be the basis for the Administration's legislative recommendations to the next Congress.

For months now, other reports will come pouring in. Nearly a score of them will concern matters of deep interest to the construction industry. Top-level groups like the Hoover Commission and the Cabinet Committee on Water Resources have spent months sifting the facts in the preparation of these reports. Most of their recommendations are expected to be wrapped up in the program the President lays before Congress next month.

For construction men, here are the most important reports to watch:

• The Clay committee's report on how to implement the President's proposal for a highway building program totaling $100 million during the next 10 years.

• The Hoover Commission report, particularly the report of the task force headed by Adm. Ben Moreell on development of the nation's power resources.

• The report of the Cabinet committee, under Secretary of the Interior Douglas McKay, on water resource development.

The report of the Clay committee (the President's advisory committee on a national highway program, headed by Gen. Lucius D. Clay) was scheduled originally for Dec. 1. The report now is being held up until about Dec. 15 to allow the group to study and incorporate the recommendations approved this week by the executive committee of the Governors' Conference, meeting in Chicago.

That delay won't alter the President's plan to lay out the broad objectives of his program in his State of the Union Message, due soon after Congress convenes Jan. 5. Nor will it set back Eisenhower's special message on the roadbuilding program, expected to follow the State of the Union Message next month.

• **Hoover's job biggest**—Biggest of all the reports now in preparation will be that of the Hoover Commission. This group's final report is due May 1, but it will make a comprehensive interim report before the end of this year.

Hoover's job this time has broader scope than was assigned the old Hoover Commission in 1947. The new commission is called on to tackle federal functions as well as organization. By direction of Congress, it seeks to eliminate nonessential services, functions and activities which compete with private enterprise.

That directive implies less federal activity in power development, either on multi-purpose river projects or on single-purpose power plants. The commission's task force on water resources and power, headed by Adm. Ben Moreell, almost certainly will recommend that the federal government adopt Eisenhower's partnership policy of letting local interests develop the power on the nation's streams. And the commission itself may be expected to endorse that view.

The task force also will advocate changed federal policy on repayment for flood-control and navigation improvements, observers believe. So far the federal government has paid the full construction cost of these jobs. Moreell's group is expected to recommend payment by local beneficiaries for all benefits they derive from flood-control and navigation works.

(*Continued on page 22*)

. . . Federal construction policies

What the Hoover Commission will say about merging of the federal government's civil works programs—particularly in the water resources field—is still a question. But the Moreell task unit and the commission itself are likely to go along with Hoover in his long fight to consolidate Army civil works with reclamation. And the new commission is almost sure to follow the old in recommending some kind of engineering-economic board, in the office of the President, to review federal projects.

Of the 14 task forces exploring separate areas for the Hoover Commission, the study unit on federal real property ranks next in construction importance to the Moreell group. Chairman John R. Lotz and his task force will come up with findings on the government's new lease-purchase building program and on Defense Department construction operations. The commission will base many of its construction recommendations on this group's work.

• **Other reports**—Other groups scheduled to report to the President this week or early this month are his Cabinet Committees on Water Resources Policy, on Transportation, and on Fuels Policy.

The water resources group is making an interim report, to be followed by final recommendations March 1. The Cabinet Committee on Water Resources is expected to go all out for the $1-billion Upper Colorado storage project, which may give that project a needed push in the new Congress.

The transportation group, headed by Commerce Secretary Weeks, is expected to go along with revised Commerce policy on federal aid for airports—to continue federal matching grants to local airports but to restrict the aid to fields of national importance and then only to flying facilities like runways, lighting, etc., with no federal money to be used for terminal buildings.

On March 1, Eisenhower is scheduled to receive the big report of the Kestnbaum Commission on inter-governmental relations—a major effort to determine what activities should be carried on by the six levels of government, from federal to township or district, and how governmental functions and taxes should be apportioned among the various levels. One of the commission's knottiest problems lies in the field of federal aid.

The federal government now is passing out money grants to states and localities through 78 grants-in-aid programs. Measured against the total federal budget, the amount given out in grants is relatively small, but the Kestnbaum Commission looks on federal aid as a critical problem that can be handled much better than it is today.

In the construction field, the commission has study committees reporting to it on highways, water, public health, education, welfare, housing and community development, aviation (especially airports and airways) and other federal-local activities which involve architect-engineer and contractor services.

• **Trends noted**—That the study committees are not blind to the trend of the times is shown by the final report of the highway group. This committee, headed by Clem D. Johnston, president of the U. S. Chamber of Commerce and of PAR (Project Adequate Roads) last spring submitted a first report recommending that the federal government quit highway construction aid and gasoline taxation entirely. Its final report to the commission takes a drastically modified position, much more in line with what the Clay committee will recommend to the President.

Former Budget Director Joseph M. Dodge is making a study, also scheduled for report to the President this month, that may recommend changes for the technical cooperation program of the Foreign Operations Administration.

U. S. engineers have been the backbone of this program. Hundreds have gone to under-developed countries under foreign aid programs to help develop irrigation, flood control and hydropower projects, build roads and sanitary facilities and the like.

Ohio Turnpike Link Is Ready for Traffic

The first section of the Ohio Turnpike—a 22-mi link connecting with the Pennsylvania Turnpike at the state line—was opened to traffic Dec. 1.

Starting at Petersburg, the section runs southwest, by-passing Youngstown a few miles to the south. Until now, this heavily congested area has been one of the worst traffic bottlenecks in the route westward. Opening of the new section provides 382 mi (360 mi of it in Pennsylvania) of continuous turnpike from the Delaware River westward.

On completion next autumn, the remaining 291 mi of the Ohio Turnpike will extend west from Warren to Columbia, in the northwest corner of the state on the Indiana border.

Lease-Purchase

Senate committee gives its conditional approval of the first 10 projects

The Senate Public Works Committee has given conditional approval to the first 10 lease-purchase projects, including an $8-million Atomic Energy Commission Building.

Sen. Francis Case (R-S. D.) said the major condition agreed to at the closed meeting was to require two-thirds committee approval of detailed project reports to be prepared by the staff.

Unless a third of the committee members object to a project within seven days of receiving staff-prepared reports on the projects, they will be considered approved, he said.

In addition, Case said, the committee voted to require competitive bidding on each project and clearance of the AEC project with the Joint Committee on Atomic Energy. Staff reports on the first 10 projects were expected to go out this week for committee approval.

The 10 building projects already have been approved by the House Public Works Committee and the Bureau of the Budget.

The projects, their cost and location:

AEC building, to be located within a 30-mi range of Washington (no site selected), the estimated cost to be $8,400,000.

Post office and courthouse building in Green Bay, Wis., estimated cost $1,615,000.

Post office and courthouse building in Kansas City, Kan., estimated cost $4,540,000. (GSA says they are going to review this project to see if it can be revised downward in regards to size and cost).

Post office and courthouse in Rock Island, Ill., the estimated cost to be $2,000,000.

Post office building in Brooklyn, N. Y., the estimated cost to be $270,000.

Post office in Point Pleasant, N. J., to cost $68,750.

Post office in St. Mary's Ohio, $82,500.

Post office in Oxford, Pa., estimated cost $65,000.

Post office in Scranton, Pa., $60,000.

Garage and parking lot for mail trucks in Atlanta, Ga., estimated cost $179,100.

Officials can't say how soon architect contracts on these projects will be ready. Lawyers still are working over the form that such contracts will take.

Slum Fight Aided

Supreme Court decision takes liberal view of redevelopment programs

Municipal agencies involved in some 250 slum clearance projects and many others now in the process of drawing up urban renewal or slum prevention programs last week welcomed the more favorable climate created by the U. S. Supreme Court decision upholding their use of eminent domain.

The Supreme Court ruling (ENR Nov. 25, p. 13) swept away all doubts as to the power of redevelopment agencies to acquire private property, whether sub-standard or not, in order to redevelop a properly designated slum or blighted area—and regardless of whether the property is later to be sold to other private interests.

On this vital point, the Supreme Court decision gave validity to similar decisions made by the high courts of 21 states. But, more than this, it enunciated a broad and liberal concept of the use of police powers to attack the problem of sub-standard housing and sub-standard neighborhoods.

The court's underlying philosophy was forcefully stated in this excerpt from its decision:

". . . Public safety, public health, morality, peace and quiet, law and order—these are some of the more conspicuous examples of the traditional application of the police power to municipal affairs. Yet they merely illustrate the scope of the power and do not delimit it. . . . Miserable and disreputable housing conditions may do more than spread disease and crime and immorality. They may also suffocate the spirit by reducing the people who live there to the status of cattle. They may indeed make living an almost insufferable burden. They may also be an ugly sore, a blight on the community which robs it of charm, which makes it a place from which men turn. . . .

"The concept of the public welfare is broad and inclusive. . . . The values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully patrolled. . . ."

• **Private property is issue**—The case before the Supreme Court involved a Washington, D. C. department store owner, whose store, though admittedly not in sub-standard condition, was located in an area earmarked for slum clearance and redevelopment. He objected to the fact that the store would be torn down by a realty concern engaged in the redevelopment program and then perhaps sold to another private owner. Such seizure, he argued, was not in the "public interest," since the property itself wasn't sub-standard. He charged seizure was, in effect, a deprivation of his property under the Constitution.

The Supreme Court, however, held that the fact that private enterprise will redevelop the area did not alter the basic right of the redevelopment agency to exercise eminent domain in order to carry out public improvements on an area basis as provided in the law.

How the court viewed the role of private enterprise is particularly significant in respect to the urban renewal or neighborhood rehabilitation programs being fostered under the new housing act of 1954 (ENR Nov. 25, p. 15). It is contemplated that, under these programs, private corporations will be organized not only to finance and supervise repair work on sub-standard dwellings but also to purchase condemned property where necessary and construct new housing.

". . . The public end may be as well or better served through an agency of private enterprise than through a department of government—or so the Congress might conclude. We cannot say that public ownership is the sole method of promoting the public purposes of community redevelopment projects," the court declared.

"It is not for the courts to determine whether it is necessary for successful consummation of the project that unsafe, unsightly, or unsanitary buildings alone be taken or whether title to the land be included, any more than it is the function of the courts to sort and choose among the various parcels selected for condemnation.

"The rights of these property owners are satisfied when they receive that just compensation which the Fifth Amendment exacts as the price of the taking."

$125-Million Power Plant

Kansas City Power & Light Co. will construct a $125-million, 800,000-kw power plant in four units over a period of 13 years on a 5,000-acre site adjacent to the Henry County coal fields near Clinton, Mo., 70 mi southeast of Kansas City. A 3,500-ft earthfill dam will be built across Deepwater Creek to impound 14,354 acre-ft of water for cooling purposes. The dam is scheduled for completion during the fall of 1955.

Construction of the first of four generating units is planned to get under way in the spring.

Hell's Canyon

Idaho Power Co. gains support for its proposal to build three low dams

Idaho Power Co. picked up important support last week in its fight to get a Federal Power Commission license to build three low-level hydro dams at Hell's Canyon on the Snake River in Idaho.

The support came as a recommendation by FPC counsel John C. Mason that the company be permitted to go ahead with the project. It was the first formal endorsement of the project by a government official.

Experts believe Mason's recommendation definitely tips the scales against development of the site by the federal government. Advocates of public power argued through weeks of hearings for construction of a single high-level dam as a federal project.

But the issue is far from settled. Each party to the controversy will have 60 days in which to file a second brief. Then, Examiner William Costello may decide to hold additional hearings before submitting his findings to the commission.

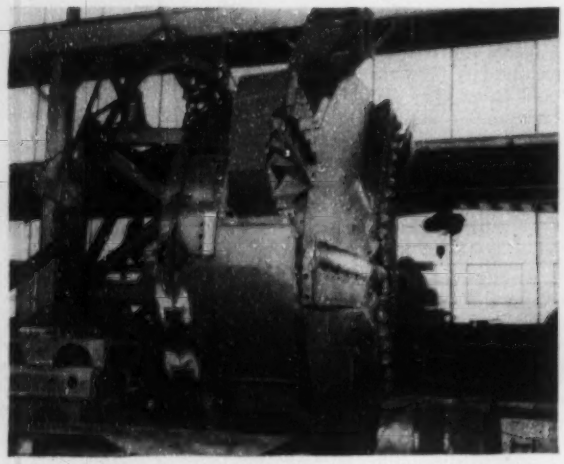
It may be another six months before FPC hands down its ruling. The guessing now is that the commission—composed of three Republicans, an Eisenhower Democrat and one independent—almost certainly will rule in favor of private development of the site by Idaho Power Co.

The company wants to build hydro projects at Oxbow, Brownlee and Hell's Canyon. The three rock-fill dams would develop a total head of 602 ft and cost $133 million. Initial installed capacity of the three dams would be 783,000 kw, with peaking capacity of 900,800 kw. Provision would be made to bring total installed capacity to about 1,175,000 kw with peaking capacity of over 1,300,000 kw when required.

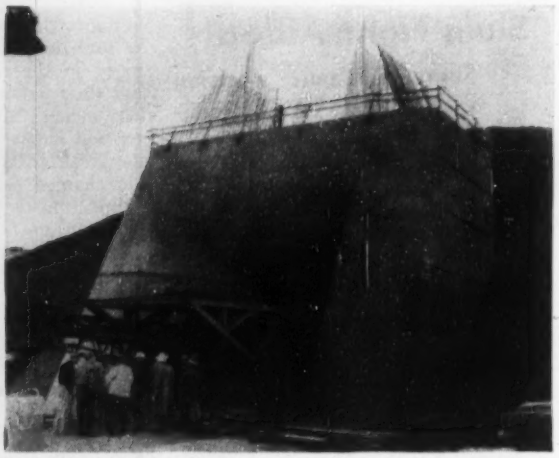
Idaho Power Co. says the Oxbow project could be completed within 24 months after start of construction; Brownlee, in 30 months; and Hell's Canyon within 36 months.

The proposed federal project calls for a concrete arch dam with a head of 722 ft. Its cost would amount to about $556 million and its initial installed capacity would be about 800,000 kw.

The controversy between advocates of a federal project at Hell's Canyon and the supporters of private development probably will not end with the FPC ruling when that comes. Almost certainly the controversy will flare again when it comes before the next Congress.



HEAD of the continuous miner chews into rock at a rate of four feet per hour or better.



TAIL of the big machine is a conveyor belt which carries tailings to dump trucks outside.

New Machine Speeds Large Bore Tunneling

Pushbutton tunneling for large bores is getting its first trial at Oahe Dam, near Pierre, S. D., where a $300,000 jumbo rig is chewing out the first of six tunnels being built for the dam's outlet works.

The tunneling machine was developed by Mittry Constructors of Los Angeles, the company that holds the $9.5-million Stage I contract for Oahe outlet works. It is designed to drill from four to 10 ft per hour, a far better rate than was achieved on two other Missouri River dams in the Dakotas—Garrison Dam and Fort Randall Dam.

At Garrison, where line drilling was employed, and at Fort Randall, where the tunnels were cut through chalk by a combination of peripheral sawing and drilling, the tunnels were advanced about one foot an hour.

Oahe Dam's tunnels are being cut through soft rock that is capable of mining by continuous methods. The rock is Pierre shale interlaced with fault and joint planes and broken up by horizontal seams containing bentonite. When it is wet, the bentonite lubricates the seams, making the formation an unstable one.

Engineers on the job are happy to avoid blasting because they are anxious to disturb the rock as little as possible. For this reason the continuous miner is a welcome construction tool.

The tunneling machine is an ambitious innovation by F. K. Mittry, Sr., and F. K. Mittry, Jr., who head Mittry Constructors. They gambled $50,000 for engineering studies and $250,000 for construction of the machine. James S. Robbins of James S. Robbins & Associates, Chicago, worked with them on its design. The rig was built by the Continental Foundry & Machine Company, Chicago.

• **How it operates**—The key part of the machine is the cutter head, which shoves against the tunnel face to claw and wedge the rock loose. The cutter head consists of two essential parts: a center disc carrying three sets of cutters and rollers placed radially 120 deg apart; and six sets of cutters and rollers projecting beyond the disc to full bore radius.

The inner disc and outer arms revolve in opposite directions to cancel torque. The inner disc's counterclockwise speed is 22 rpm; that of the outer ring is 19 rpm.

The outer arms also gather muck. Behind the cutters, as an integral part of their mounting plate, are buckets. These pick up and dump the excavated rock as the head moves. The bore of the tunnel is varied by mounting cutter bars and buckets of differing size on the machine.

Rock is broken by a combination of cutting and wedging. The cutters carve inch-wide grooves set 10 in. apart. The rollers, which trail the leading edge of the cutter by about six in., act as wedges, bearing half-way between the grooves, to pry and break the rock

F. K. MITTRY (right) and F. K. Mittry, Jr., who head Mittry Constructors, are the men who dreamed up the machine.

loose. Their action is similar to that of a glass cutter. Motive power is a 200 hp electric motor.

Forward motion of the machine is achieved by hydraulic jacks that bear against rib ring beams to push the rig ahead.

The machine makes provision for close control of the direction of bore. It has a pilot bit, an oversized version of the leadscrew on a carpenter's wood bit, at the center of the inner disc. Mounted in the cutter head are three hydraulic jacks. One at the bottom acts vertically, and the others, at either side, act transversely. With these, the cutter head can be swung in any direction.

The machine rides on a shoe which slides along the invert and on a dolly mounted on 136-lb railroad steel. Total weight of the rig is 85 tons; cutter head accounts for 32 tons of the total.

A system of conveyor belts leads to the tunnel portal, where trailings are loaded. In this way, car or truck muck haulage in the tunnel is eliminated.

Riding behind the cutter head is a jig for setting tunnel ribs. These are brought in a quadrant at a time, assembled and expanded in place. No more than six ft of overhead rock is unsupported at any time.

Provision is also being made for an overhead rig, riding on a track hung from the ribs to bring in buckets of concrete for the invert. Invert concreting will follow boring closely. The concrete in the upper portion of the tunnel will be placed by pump.

• **Oahe construction schedule**—The Mittry contract covers the intake portion of the outlet works and the upstream halves of the six 3,450-ft flood control tunnels. As the world's largest rolled earth dam, Oahe will have nearly eight miles of tunnels in all.

The $316-million dam project now is approximately 8% complete, but it will pick up in construction pace during the next year. Army Engineers opened bids last week for construction of the stilling basin. And three more major contracts are in the making.

Pierre Contractors, a combine of three firms, was apparent low with a bid of $4.8 million for the stilling basin job. Participating in the combine were Bruce Construction Co. of Fort Worth, Texas, the sponsoring firm; Russell Mitchell of Houston, Texas; and William A. Smith Construction Co. of Kansas City, Kans.

A total of 15 bids for the job was received. Morrison-Knudsen Co. bid $4.92 million, and Tecon Corporation of Dallas, Texas, bid $4.96 million. Government estimate for the job was $4.93 million.

Bids will be advertised this winter for construction of the downstream tunnels, the control shafts and a 16-million yd contract for placing the left bank embankment.

Diversion is scheduled for 1958. First power will come on the line in 1961. Completion is due in 1963 or 1964. Oahe will produce 425,000 kva.

John Sibert is Oahe area engineer for the Army Engineers. Col. Thomas J. Hayes 3d, is Omaha District Engineer, serving under Brig. Gen. W. E. Potter, Missouri River Division Engineer. Besides the Mittrys, key members of their staff include W. L. Sanders, project engineer, and George Lyle, tunnel superintendent.

Concrete in Buffalo Job Loses Strength With Age

Work has stopped on a low-rent housing project under construction in Buffalo, N. Y., pending an investigation of the concrete in foundation walls. According to Robert H. Tifft, construction engineer for the Buffalo Housing Authority, for which the project is being constructed, the concrete has been losing strength with age, instead of gaining, for reasons not yet determined.

When routine cylinder tests were made of the concrete, about 7% or 8% of the specimens were below required strength—which was not considered cause for serious concern. However, as a precaution, cores were taken about 40 days after the tests to see if the concrete had reached design strength in the interim. Surprisingly, the cores broke at lower stresses than the cylinders. About 4,000 cu yd of concrete may be involved.

The project will consist of six 8-story buildings, containing 383 apartments, and several two-story buildings, with 100 units—all of reinforced concrete construction. Stanley Podd, Buffalo, is the architect, and Gill, Beane & Schlenker, the structural engineer. A $3.5-million general contract for the project is held by John A. Johnson & Sons, Brooklyn, N. Y.

Engineers, Crews Form AFL Union in Colorado

Three graduate engineers and 13 surveyors, rodmen and other engineering crewmen working on a housing project in a Denver suburb have taken steps to form the first AFL civil engineers union in Colorado.

Ed Benefiel, a business agent of the International Union of Operating Engineers, said the proposed union would be a branch of Local 9 of that union.

The men are working for F&S Construction Co., builders of a 5,000 home development at Thornton, Colo., on the outskirts of Denver.

St. Lawrence Jobs

Bid calls due this month for two main structures

Calls for bids for two of the main structures of the St. Lawrence River power development are to be issued by the Power Authority of the State of New York in late December.

The two structures are the Long Sault Dam and the New York half of the Barnhart power plant, which also will form a dam across the channel between Barnhart Island and the Ontario side of the river (see ENR Aug. 12, p. 22 for map). The Hydro-Electric Power Commission of Ontario will build the remaining half of the power plant.

Work on the cofferdams for Long Sault Dam already is under way. The dam itself is to be made up chiefly of a gravity-concrete spillway section 2,390 ft long and 145 ft high above foundations and flanked by short sections of concrete bulkheads, earth wing dams and an earth dike. Mounted on the spillway crest will be 30 crest gates 50 x 29 ft. Plans and specifications for this work are expected to be ready for bids before Dec. 15.

Plans and specifications for the powerhouse are expected to be ready for bidders soon thereafter. That structure also is a gravity-concrete design, 160 ft high above foundations and 3,130 ft long, divided equally by the international boundary line.

The power plant is to be the fully outdoor type with 16 units on the New York side.

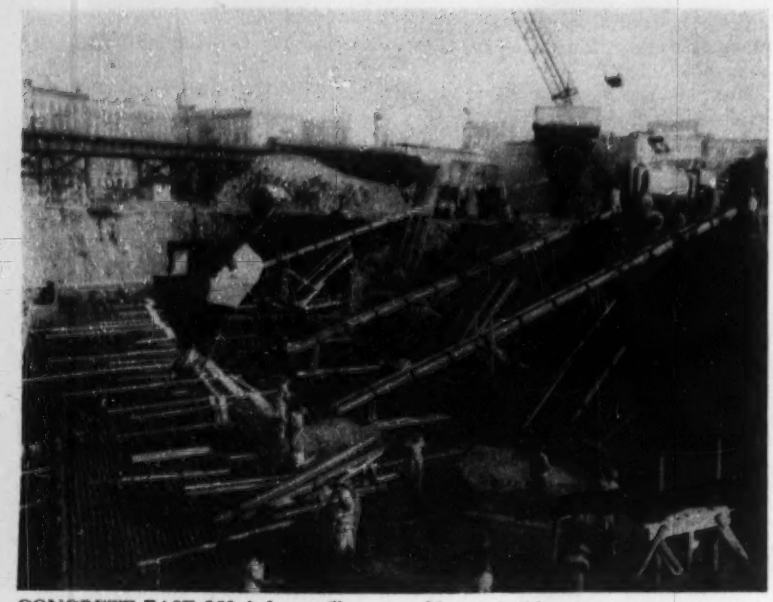
NSPE Asks Memberships To Finance Headquarters

Members of the National Society of Professional Engineers are being asked to finance the cost of a $400,000 headquarters building for the society in Washington through the purchase of 4% participating certificates of $100 face value.

Cost of the proposed building on land now owned by the society at 2029 K St., N.W., is estimated at $310,000. Land costs (repayment of short-term loans) will amount to $55,000, leaving $35,000 for moving costs, architect's fees and incidentals.

Designs for a four-story building with 12,500 sq ft of usable floor space have been prepared by Laurie and Green, architect-engineers, of Harrisburg, Pa.

The certificates do not constitute a lien on any specific assets of the society, and they may be paid off at any time prior to maturity on Dec. 1, 1974.



CONCRETE BASE 250 ft long will support 21-story building.

Foundation Mat Placed in 13-hr Pour

Thick concrete mats each containing about 2,400 cu yd of concrete are being placed in one-day continuous pours to form the foundations for the 21-story General Grant Houses being built for the New York City Housing Authority.

The site, south of 125th St. between Broadway and Amsterdam Ave. on the upper west side of Manhattan, is a valley floored with glacial drift, which is not capable of supporting spread footings. Piles could not be used because of the presence of big boulders. Instead, each of the five reinforced concrete buildings in the first section of this low-rent project are being founded on a 50x250-ft reinforced concrete mat 5 ft thick and 25 to 45 ft below grade.

Because of the thickness of the mat, unusually high chairs had to be used to support the upper layers of reinforcing steel. Some chairs are over 4½ ft high.

To obtain sufficient concrete for the continuous pours, each mat is being cast on a Saturday, and the output of two ready-mix plants is utilized. Work starts at six in the morning and placing of the 2,400 cu yd is completed about 13 hr later.

For the first mat, concrete was placed by three cranes, each equipped with a 1½-cu yd bottom-dump bucket, and from three steel chutes. Specially fabricated for this purpose, the chutes are 60 ft long. Auxiliary chutes 25 ft long are used, when necessary, to extend their reach.

Concrete for the second mat was placed only from the chutes. The rest of the mats also will be concreted in this manner.

The mats will support reinforced concrete piers 14 to 25 ft high, which, in turn, will carry the basement floor. The superstructures will be flat-plate construction and will be enclosed with brick cavity walls. They may set a new record for height of building with this type of wall.

Eggers & Higgins are the architects, and DiStasio & Van Buren, consulting structural engineers, with Moran, Proctor, Rutledge & Mueser as consultants on the foundations. Paul Tishman, General Contractor, Inc., is erecting the buildings. All have headquarters in New York City. C. A. Selby is chief engineer for the contractor, and Mariano Serritella, concrete superintendent.

Mass. Turnpike Authority Opens First Bids Dec. 14

Massachusetts Turnpike Authority will open bids Dec. 14 for the first contract for construction on the state's $239-million toll highway. The 123-mi project is scheduled for completion in November 1956.

The first contract will be for construction of a 4-mi section of the divided, triple-lane highway near Weston. Cost: about $4 million.

William F. Callahan, chairman of the Turnpike Authority, said other contracts will follow at the rate of about two a week for the next five months. He said construction will be in full swing by March 1955.

Jobs in the News

DEVELOPMENT—F&S Construction Co., Phoenix, Ariz., will build 4,000 homes in Upper Marlboro, Md., as the first phase of a $60-million development in Maryland's Prince George County. The completed project will include churches, schools and a shopping center.

BUTADINE PLANT—Texas Butadine & Chemical Corp., Dallas, Texas, will construct a butadine and alkylization plant at Houston. Estimated cost is $28 million. Fluor Corporation, Ltd., Houston, is contractor.

OFFICE BUILDING—Uris Brothers, New York, will build a 30-story office building in New York City on Lexington Ave. at 46th St. Estimated cost is $25 million. Emery Roth & Sons, New York, are achitects.

HOUSING—Winn-Rau and Winn-Senter Construction Companies, Kansas City, Kans., were awarded the contract for construction of 2,000 homes in Kansas City for Minnesota Ave., Inc. Estimated cost is $30 million.

BRIDGE TUNNEL—Merritt-Chapman & Scott, New York, has awarded two subcontracts for work on the Hampton Roads, Va., bridge-tunnel. Atlantic Contracting Corp., Norfolk, was awarded the contract for dredging and backfilling on the trench for the tunnel. Baldwin-Lima-Hamilton Corp., Philadelphia, was awarded the subcontract for fabrications of the 23 tunnel sections.

Portland Division Engineers Schedule Contract Awards

Major construction contracts for The Dalles Dam and powerhouse on the Columbia River are included among the $55 million of contracts that the Corps of Engineers, Northwest Pacific Division, in Portland, Ore., expects to let before the middle of next year.

The major project of the group is construction of the second phase of The Dalles powerhouse—a job for which bids may top $15 million. Bid opening is scheduled for Dec. 15.

Other work at The Dalles includes construction of a closure dam and cofferdam removal. This job—expected to amount to $10 million to $15 million—will be advertised June 1, 1955, for bid opening July 1.

Bids will be called Dec. 20 and opened Jan. 18 for relocation of 14 mi of Spokane, Portland and Seattle Railway track. The contract is expected to run close to $10 million.

CITY BY CITY

High Finance

Omaha—Northern Natural Gas Co. of Omaha has offered to buy the municipally owned gas system and has made the suggestion that proceeds from the sale be used to help meet the city's pressing sewer and water pollution problems.

The Metropolitan Utilities District now operates Omaha's gas distribution and water systems. The present book value of its equipment reportedly is $16 million—and Northern suggests this figure as a price from which to start negotiations.

The MUD—by selling the gas system—would be in a position to take over the sewer system from the city. By handling both water and sewers, it could save Omahans from the possibility of having to pay a sewer-construction tax. Sale proceeds could be used to build new sewer lines, to construct sewer-disposal facilities, or for a combination of both.

Both the sewer and pollution problems are serious ones. Omaha is now the biggest single contributor of sewage to the Missouri River, and the federal government has been urging it to erect treatment plants. It would cost some $15 million to build three necessary plants and interceptor sewers, while modernizing sewers would take another $15 million.

Clean-up Corporation

East Chicago, Ind.—For a number of years East Chicago's expanding industries have accentuated the city's housing problem. Now—to improve community conditions—Purdue University, a group of industrial corporations and city officials have united to form a million-dollar redevelopment foundation.

The non-profit corporation—called the Purdue-Calumet Development Foundation—will be empowered to aid such activities as slum clearance, housing construction and neighborhood rehabilitation.

The million-dollar fund, expected to finance a three-year program, is being raised from business firms in the area. Some $200,000 will go toward community planning and programing purposes. The remaining $800,000 will become a revolving fund for investment in self-liquidating community betterment projects. In addition, the foundation will have trust powers enabling it to accept and administer gift funds.

(*City by City continued on page 28*)

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Case Concluded

Indianapolis—The Indiana Supreme Court has ruled that Indianapolis' City Sanitation Board is not subject to state constitutional limitations on municipal corporations. The decision clears the way for the development of a $19.5-million sewer extension and plant modernization program.

The court upheld the constitutionality of a 1951 law that increased the Indianapolis Sanitary District bond limitation on assessed valuation from 2% to 4%. This action upheld the earlier ruling of a lower court, which had refused to issue a restraining order to prevent the city from selling bonds totaling some $8.7 million. The issue would have raised the board's bonded indebtedness above 2%.

The test suit, which has delayed the modernization program, was filed last February as a taxpayer's action against the city, city officials and the sanitary district.

As a result of the high court's decision, work will get under way immediately on $4.5 million worth of new garbage incinerators at the Indianapolis sanitation plant. Surveys on a projected $15-million expansion of the city's interceptor sewer network are expected to get started within a few weeks.

Project: River Tunnel

Baton Rouge, La.—Baton Rouge is looking into the possibilities of building a vehicle tunnel under the Mississippi River to connect the city with the Greater Baton Rouge Port, now under construction.

A Mobile, Ala., engineering firm—Palmer & Baker—has been hired to make a preliminary study and cost estimate. Previous price tags on the Mississippi tunnel ran between $40 million and $50 million. But the Mobile firm reportedly thinks the work can be done for around $10 million. The project probably would be financed by revenue bonds supported by toll fees.

Big Improvements

Detroit—Some $45 million will be expended for making street improvements in Detroit during fiscal year 1954-1955.

This is where money for the projects is coming from: revenue bond financing, $25 million; Detroit's share of the state gasoline tax, $8.5 million; federal aid, $5 million; state and county participating funds, $6 million.

Meanwhile, city officials have released details of an ambitious road program planned for the next 10 to 20 years. During this period, $1.5 billion will be spent for expressway, highway and street systems.

The long-range program calls for widening 33 major streets at a cost of $79.5 million; constructing 51 grade separations at railroad crossings, $51 million; rebuilding 23 present grade separations, $14 million; repaving and resurfacing 600 mi of major streets, $42 million; paving 300 mi of unpaved streets, $1.6 million; extending dead-end streets, $13 million.

By 1975, the city will have spent $805 million on major expressways totaling 116 mi.

New Population Pattern

New York City—Families are moving not only from the city to the suburbs, but also from larger suburban cities to more open environs on the suburban fringes.

This is the conclusion of a study of population trends in the New York City metropolitan area since the end of the World War II. The report was published last week by Regional Plan Assn., Inc., a private agency serving the area around the Port of New York.

According to the report, three-quarters of the population increase in the New Jersey-New York-Connecticut metropolitan region between April 1950, and January 1954, occurred outside 20 cities with more than 50,000 inhabitants. During this same period, the population of the total region increased 8%—from some 13,900,000 to over 15,000,000.

As a result of this population redistribution, the 20 large cities had only 68% of the region's population in 1954, whereas in 1920 their share was 81%.

Long-Term Expansion

Los Angeles—The Los Angeles Department of Water & Power has announced plans for construction of a $90-million steam generating plant near Long Beach.

The plant is part of a long-term expansion program and will follow completion of the $90-million El Segundo, Calif., plant, which is scheduled for construction during the 1957-1959 period.

The capacity of these facilities has not been disclosed, but it is expected that they will be capable of generating more than 512,000 kw—the capacity of the $80-million San Fernando Valley generating plant, now under construction.

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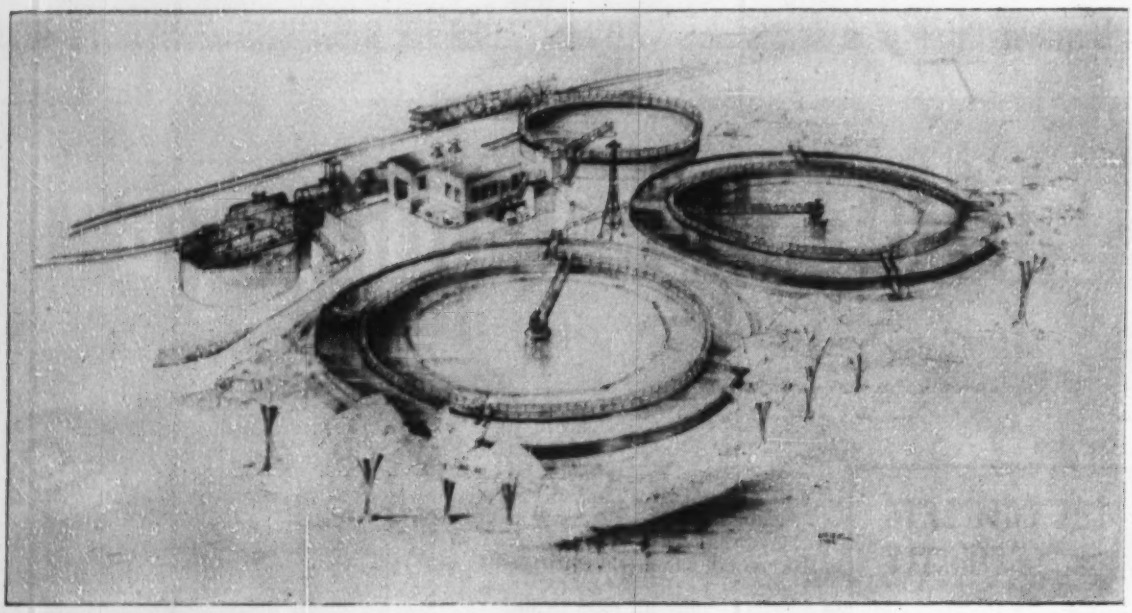


PAPER WASTES TREATMENT PLANT to be finished next spring in Covington, Va., is a "first".

Waste Works Points Way for an Industry

W. Wesley Eckenfelder, Jr.
Partner and Process Engineer
Weston, Eckenfelder & Hood
Paterson, N. J.

Theodore L. Moore
Supervising Sanitary Engineer
Gibbs & Hill, Inc.
New York, N. Y.

There is great significance in the 16-mgd waste treatment plant being built for West Virginia Pulp and Paper Company at Covington, Va., at a cost of about $1.5 million exclusive of waste collection facilities.

It is the first large scale activated sludge plant to be constructed for treatment of the complex organic wastes of the kraft pulping process. As such, it represents culmination of lengthy research and pilot studies which proved this process will work. It also should open the way for more installations of the same type in other location.

The pulp and paper industry has long recognized the pollution problem created by discharge of its industrial wastes into receiving streams. In its efforts to cooperate with public agencies and other interested groups, the industry has been studying adequate methods of correcting these conditions. West Virginia Pulp and Paper Company has been a leader in this movement.

The Covington mill is located near the headwaters of the Jackson River, a tributary of the James. There, a sulphate process pulp is produced by cooking or digesting wood with sodium sulphide and sodium hydroxide under heat and pressure. This attacks the ligno-celluloses permitting the lignins to go into solution and the cellulose fibers to be recovered as pulp for the manufacture of paper, sanitary food board and a 9-point corrugated medium. The digester cooking chemicals are reclaimed by pulp washing, evaporation, incineration, and recausticizing.

• **In-plant refinements made first**—Since the end of World War II, a series of in-plant improvements relating to water recovery and reuse has reduced materially the volume and strength of wastes discharged to the Jackson River. However, despite this progress, waste discharges constitute a major problem. This is true especially during low flow periods, when virtually all the stream capacity is used by the mill and the flow below the plant consists mainly of mill effluent.

Most of the wastes emanate from processing, washing and bleaching the pulp and paper. These various wastes —mostly complex organic compounds such as lignin, lignone, cyclohexenedione, carbohydrates and resins along with plant wash-downs and domestic sewage—produce a waste effluent with biochemical and physical characteristics shown in the accompanying table.

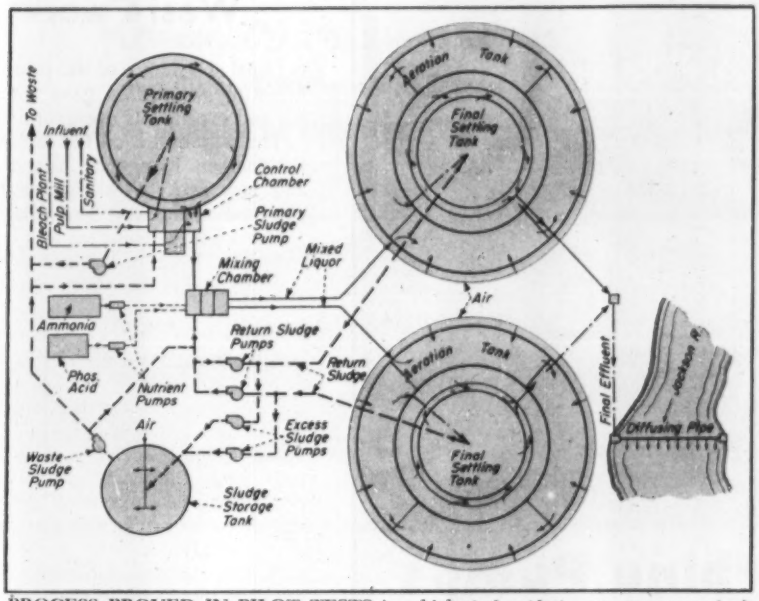
Capacity of the Jackson River to assimilate BOD was determined by C. J. Velz of the University of Michigan. This was supplemented with a biological survey of the stream by Ellis Van Horn of the Institute of Paper Chemistry, Appleton, Wis. Thus the magnitude of the problem was defined and reported to the Virginia State Water Control Board.

Then—as a result of studies made by the paper industry's National

The Wastes to Be Treated

Characteristics	Pulp Mill Chance Value Concentration			Bleach Plant Chance Value Concentration
	10%	50%	90%	50%
BOD, 5-day, ppm	169	212	259	104
COD, ppm	460	680	1020	...
Suspended solids, ppm	240	500	1500	100
pH	5.8	8.4	10.5	3.5–6.0
Ammonia Nitrogen	.....	2.9	.....	1.8

Chance value concentration indicated is the concentration which may be expected to be equaled or exceeded 10%, 50% or 90% of the time. The 50% chance value is approximately equal to the average.



PROCESS PROVED IN PILOT TESTS is a biological oxidation treatment method.

Council for Stream Improvement under the direction of H. W. Gehm, technical advisor, and W. A. Moggio, resident engineer—West Virginia Pulp and Paper Company decided to construct a plant of the activated sludge type for pilot tests.

• **Pilot plant gets results**—The pilot plant consisted of primary settling, aeration and final settling. Provision was made to vary the waste flow over a wide range. This plant was operated for a period of two years under the direction of H. E. Miller, technical director, and J. M. Kniskern, research engineer, of the Covington mill, and valuable data were accumulated.

Work done by the Covington mill's River Research Group during this period has contributed greatly to the final solution described herein. The data assembled also will help the company in its study of similar problems in the future. And finally, these efforts will prove beneficial to the paper industry as a whole.

Further round-the-clock studies of the pilot plant operated in parallel with an additional high-rate activated sludge pilot plant for a period of two weeks by Weston, Eckenfelder and Hood established the primary design basis. Independent laboratory studies also were conducted by them to evaluate sludge subsidence rates and to derive the design basis for sedimentation.

• **Criteria for design**—The pilot plant studies revealed that BOD, chemical oxygen demand (COD) and color reductions of 94, 72, and 43% respectively, could be attained at loadings of 75 lb BOD per day per 1,000 cu ft of aerator capacity. Design criteria for the waste treatment plant were derived from a statistical analysis of the pilot plant operating data. Relationships between process variables were computed from process flow and material balance.

The process selected for treatment of the wastes is a biological oxidation method consisting of four functional steps which are shown in the accompanying flow diagram. These are:

1. Primary sedimentation to remove settleable organic and inorganic solids.
2. Aeration of a mixture of waste water and a biologically active sludge.
3. Separation of the biological sludge from its associated treated liquor by means of sedimentation.
4. Return of settled biological sludge to be admixed with the raw waste.

The waste treatment plant was designed by Gibbs & Hill, Inc., to treat 8 mgd from the pulp mill and 8.2 mgd from the bleach plant—total, 16.2 mgd. Provision was made in the layout approximately to double the capacity of the plant.

• **Process details**—Establishment and maintenance of optimum treatment required that a biological balance be maintained in the system at all times. To obtain this balance, a definite quantity of available nitrogen and phosphorous was provided for the synthesis of organic matter to new sludge. The system was designed so that a minimum nitrogen and phosphorous content in the sludge of 7% and 1.2% respectively, by weight of the total volatile solids, will be maintained.

Oxygen will be applied in the amount required to oxidize the organic matter removed by the process. The oxygen requirements were determined by a statistical analysis of oxygen utilization rate data obtained from the pilot plant investigation and confirmed by a material balance of the process.

Sludge will be produced as a result of the synthesis of organic matter to bacterial protoplasm. The quantity of sludge to be disposed of was computed from the process material balance.

Design of the plant was begun just a year ago. The construction contract was awarded in May, 1954, to the Tidewater Construction Company of Norfolk, Va. Construction is now well under way, and it is anticipated that the plant will be in operation next spring.

• **Plant layout**—The rendering shows

(*Continued on page 32*)

Design Criteria

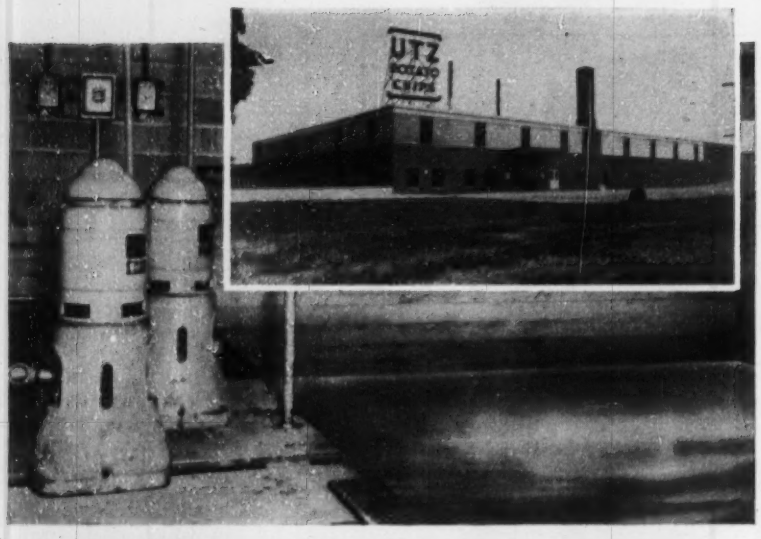
PRIMARY SETTLING TANK

Influent Suspended Solids, ppm	Approx. % Frequency	Percent Reduction	Detention Hours	Overflow gal/day/sq ft	Sludge lb/day	Waste Flow MGD	Sludge Concentration % by weight	Remarks High Lime Waste
200	10	37.5	2.3	1020	5,000	8.0	0.6–2.1	90–95% suspended solids, reduction; 0.7–17.3% sludge solids
500	50	54.5			18,250			
1500	90	65.0			65,200			

ACTIVATED SLUDGE PROCESS

Aeration Influent BOD, ppm	Approx. % Frequency	Flow MGD	Effluent BOD, ppm	Percent Reduction	Aeration[1] Detention hrs	Mixed Liquor Solids, ppm	Oxygen Requirement lb/hr O_2	Excess Sludge lb/day	Nutrient Feed Nitrogen lb/day	Nutrient Feed Phosphorus lb/day
100	10	16.0	10	90.0	3	2800	407	17,160	110	72
142	50		15	89.4			503	21,650	390	116
180	90		19	89.5			580	29,930	607	157

[1]Based on 125% of average waste flow.



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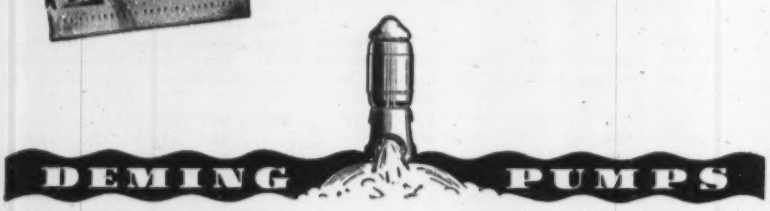

. . . Waste works

the final appearance of the plant. The following description gives some detail and explains its operation.

The pulp mill is on the east side of the Jackson River; the bleach plant and new activated sludge treatment plant are on the west bank. Pulp mill wastes are to be collected at a booster station and pumped across the river through a 24-in. line to the treatment plant.

Bleach plant wastes will flow by gravity through a 24-in. rubber-lined pipe to a brick-lined, acid-proof mixing compartment at the treatment plant. Pulp mill wastes will discharge into a 100-ft diameter primary settler with sludge thickener collectors. The effluent will be collected by a launder ring from which it will flow to the above mentioned acid mixing compartment, neutralizing acid wastes from the bleach plant.

The combined flow then will empty into a basin to be mixed with returned activated sludge and nutrient feed. The mixed liquor will then split and flow to the aeration section of two 175-ft diameter, compartmented, reinforced concrete combination aerator-clarifiers. The outer ring or aeration stage is 25 ft wide and divided into four separate compartments to provide flexibility in operation.

• **Chosen for economy**—Several types of waste treatment facilities were considered, but after evaluating requirements of the basic design criteria and construction costs, it was decided that circular tanks for the major structures were the most economical. The combination aerator-clarifiers were based on the Currie design, an earlier design of this type of facility.

The aerator effluent is bottom fed to the inner ring of the tank which is the clarification stage. After final clarification, the effluent is collected by launder rings, flows to a controlled liquid level junction manhole and then through the outfall sewer to a submerged distribution system, which permits an even dilution across the width of the river. The purpose of submergence of the distributor and level control at the junction box is to prevent air entrainment and minimize the tendency toward the formation of foam in the river.

Final clarifiers have sludge collecting mechanisms by which continuous controlled quantities of sludge are withdrawn with a portion being returned as activated sludge to the mixed liquor compartment. The remaining sludge is pumped to the sludge storage tank.

(*Continued on page 35*)

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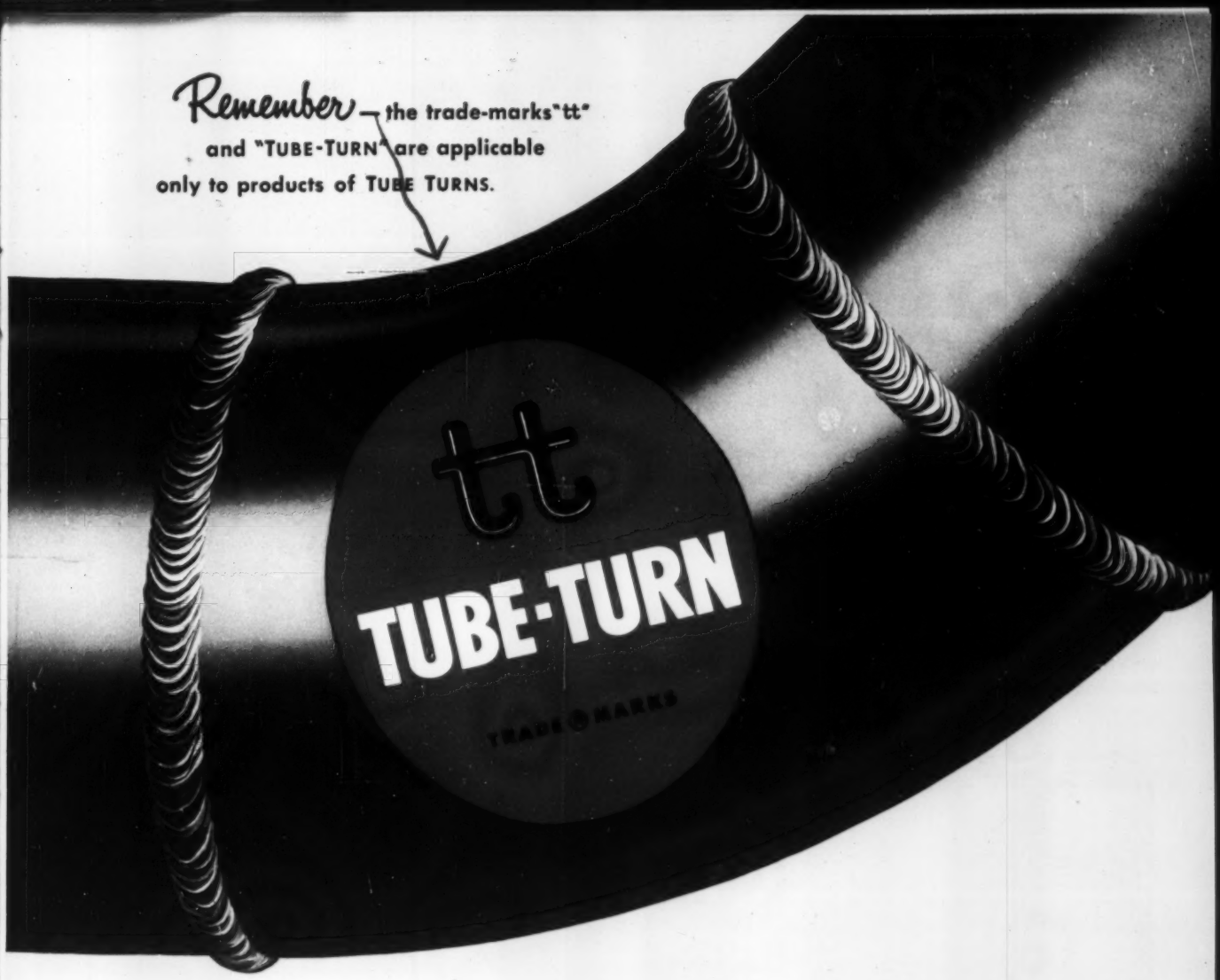

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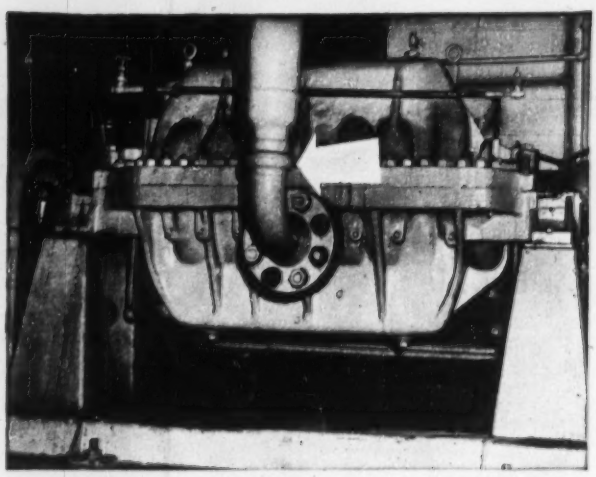

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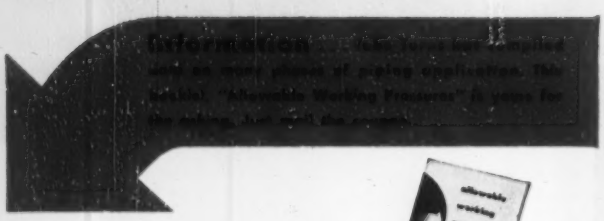

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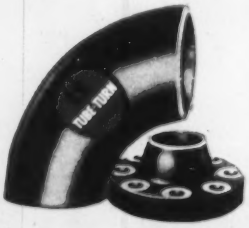

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. . . Waste works

The sludge storage tank is 50 ft in diameter and is equipped with aeration equipment. This tank stores activated sludge for an emergency supply to the plant in the event of an "upset" to the process. Under normal operation, excess sludge will flow through the storage tank to the primary settling tank, where it is anticipated that substantial amounts of nutrients will be recovered.

Settled sludge, which is stable and ready for final disposal, is withdrawn from the primary tank, pumped to a fly ash sump at the boiler house, and then pumped to a fly ash lagoon for final disposal.

A service building has been provided which houses four large blowers, eight sludge handling pumps, motor control center, instrument control panel, laboratory and office. Outside facilities were provided for unloading and storing tank car lots of 30% ammonia solution and 75% phosphoric acid.

Equipment was furnished for the flow metering of plant influent, sludge and air; the gaging of liquid levels and pressures; and the measurement of temperature, pH, and conductivity. Instruments for recording dissolved oxygen, sludge levels, and densities will be added after specific refinements to the instruments have proven satisfactory.

Overall planning and direction for the plant were furnished by the central and plant engineering departments of West Virginia Pulp and Paper Company. Process studies, evaluation of findings, and recommendations on treatment methods were made by Weston, Eckenfelder and Hood, process engineers. The sanitary engineering department of Gibbs & Hill, Inc., consulting engineers, verified the recommendations, designed the plant, and is now advising construction. This comprehensive approach should insure the most economical solution to industrial waste problems.

This was a team operation in which many people cooperated. In addition to the authors and those already mentioned, there were:

For West Virginia Pulp and Paper: C. J. Sibler, chief engineer, and A. H. Christgau, project engineer, in the central engineering department. In Covington, E. C. Williams is resident manager; J. C. House is plant engineer; R. W. Query is construction engineer.

For Gibbs & Hill: J. B. Saxe is vice-president and chief engineer; J. J. Relihan is department head and project engineer; E. A. Kass is sanitary engineer.

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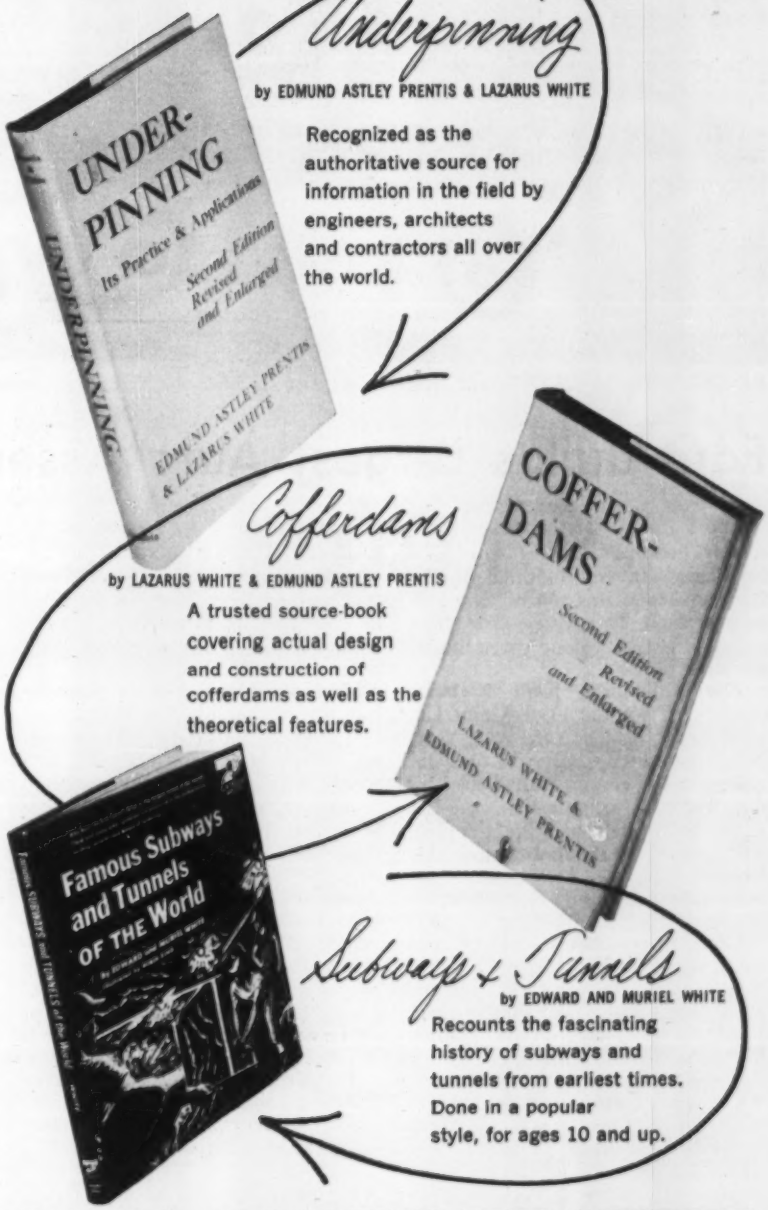
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RECORD-SIZE BUILDING now under construction at Mahwah, N. J., encloses nearly 2,000,000 sq ft.

Ford Builds Largest Auto Assembly Plant

The world's largest automobile assembly building is being rushed to completion in the foothills of the Ramapo Mountains, 20 miles northwest of New York City. The main assembly building alone covers nearly 40 acres of land.

The $20-million plant is being constructed for the Ford Motor Co. at Mahwah, N. J., on the New York-New Jersey border. It will turn out passenger and commercial vehicles for domestic and foreign sale.

Occupying a 177-acre site, the plant will consist of a one-story assembly building 2,117x792 ft, a two-story administration building 55x300 ft, an employes' facilities building 56x1,920 ft, and a powerhouse. Floor area totals nearly 2,000,000 sq ft.

About 10,000 tons of structural steel went into the whole plant. Field connections required 150,000 high-tensile steel bolts.

• **Enclosure bolted in place**—Exterior walls consist of precast concrete panels to window sill height, aluminum windows and insulated aluminum siding above. The roof is steel deck, insulated and covered with builtup roofing. Since the metal and concrete wall panels simply were bolted in place, the building was enclosed rapidly.

The concrete wall panels were fabricated on the site. About 8 ft high and 8 in. thick, they varied in length up to 25 ft and in weight up to 8½ tons. They were cast in forms on the ground and excess water removed by vacuum. The next day, a vacuum lift removed them from the forms for storage. They were set in place on the building exterior by a crane equipped with a 12-ton canvas sling.

• **Mechanized roofing**—Roof construction was accomplished with machines to speed placing of the builtup roofing. Rolls of roofing and other materials were raised to the roof, 30 ft above grade, with a portable conveyor belt, powered by a gasoline engine. Hot pitch was pumped to the roof. There it was fed into metal drums on three-wheeled trailers and hauled to the working area by four-wheeled pneumatic-tired gasoline-driven tractors (made up by adding a two-wheel sulky to a two-wheel garden tractor). Mechanical spreading of gravel was tried but was not as satisfactory as hand spreading.

For faster floor construction, concrete slabs were placed in continuous strips. Later, contraction joints were sawed along column lines.

• **Big bays**—Columns are on relatively wide spacing throughout the manufacturing area. Bays are mostly 45x50 ft, the 45-ft dimension being chosen to fit the equipment layout. There also is a 90-ft railroad and shipping bay along one side of the plant.

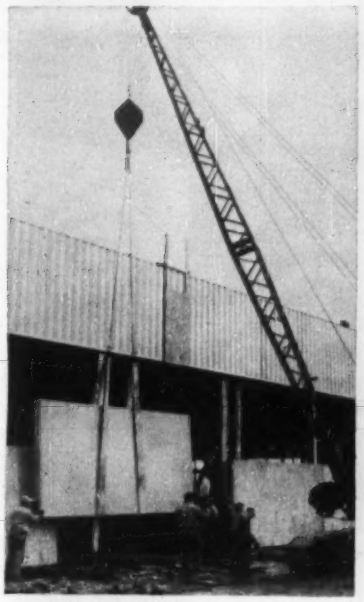
Clear height under trusses also is greater than in the usual industrial plant. A clearance of 18 ft was selected to accommodate overhead conveyor systems. In the railroad bay, where two 5-ton cranes will operate, the clear height is 21 ft.

Employe facilities, including locker rooms, toilets, first aid and three air-conditioned cafeterias, are located along a 2,100-ft side of the assembly building, in the line of travel to and from parking lots and public transportation. In addition, elevated toilet rooms were placed throughout the plant adjacent to the more densely populated areas.

• **Production layouts**—The manufacturing area is laid out in four separate sections: (1) For passenger-car production, rectangular in shape, occupying about 60% of the building. It will have a production capacity of 800 units per day on a two-shift, 16-hour basis. (2) For commercial-vehicle production system, occupying about 398,000 sq ft. It will have a capacity of 280 units per day. (3) For export boxing and shipping operations, with an area of 93,000 sq ft. (4) 145,000 sq ft for new car and truck preparation, where all final checks will be made prior to delivery of the unit to a convoy yard for rail or truck shipment.

Truck receiving and shipping facilities will be provided in an enclosed dock equipped with 15 dock levelers. This dock is attached to the receiving bay.

For ventilation purposes, the building is divided into twelve sections, each with its own fan house on the



PRECAST WALLS were positioned with a 12-ton-capacity canvas sling.

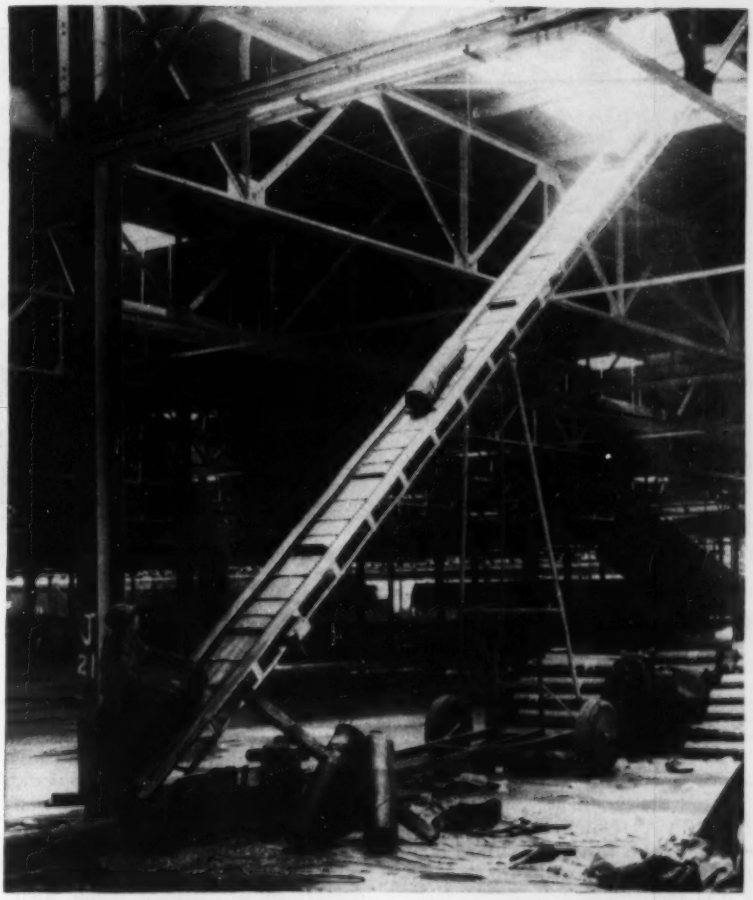
roof. Each fan supplies air to four zones through ducts, providing 10 changes of air per hour for the lower 12 ft of the building. In winter, the air will be heated by steam coils.

General lighting of about 30-ft-c intensity will be by 8-ft fluorescent lamps in the manufacturing area.

• **Fire protection**—Primary defense against fire in this plant is complete sprinkler coverage, adequate water supply through elevated and ground storage tanks and efficient fire-fighting brigades, which have strategically placed hose and hydrants. Spread of smoke and heat, in the event a fire should start, will be retarded by metal curtains extending from the under side of the roof to the bottom of trusses, dividing the building into 75,000-sq ft sections. Each section contains automatic smoke and heat roof vents. In addition, fire stops and expansion joints divide the roof into 150,000-sq ft areas.

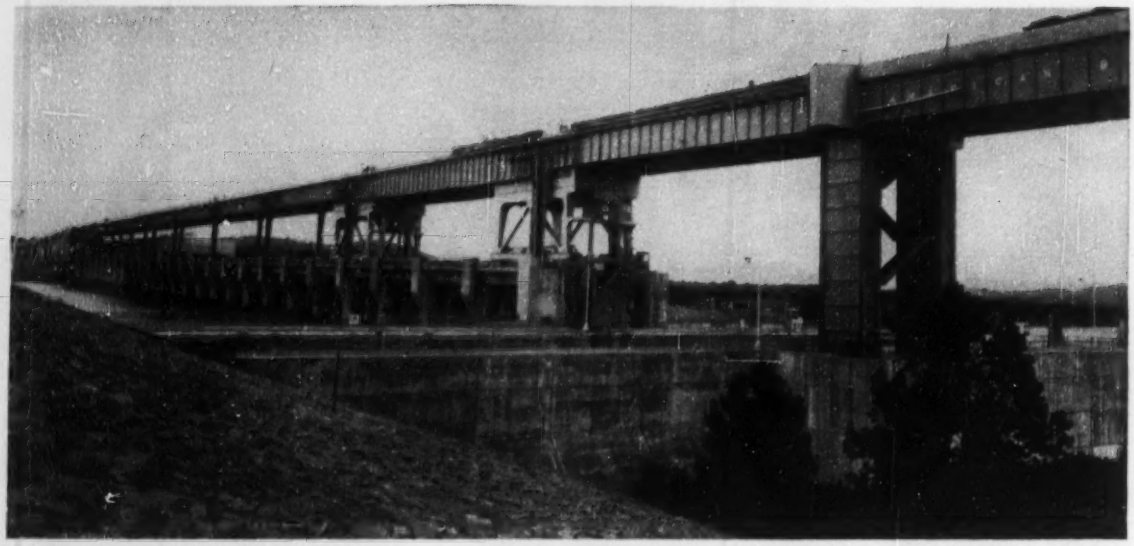
The two-story administration building at the front of the assembly building is of steel-frame construction, with a brick and aluminum facade. Facing west, it will be shaded from the afternoon sun by vertical aluminum baffles.

Giffels & Vallet and L. Rossetti are the architects-engineers. E. C. Constantine is the architect's representative on the site. Fred J. Brotherton, Inc., of Hackensack, N. J., is the general contractor, with D. T. Coates as project manager. Design and construction carried out under supervision of J. A. MacAlarney, director of Ford's plant engineering office. K. B. Lockhart is resident engineer.



PORTABLE CONVEYOR delivers roofing rolls to roof 30 ft above the floor.

TRACTOR delivers drum of hot pitch for builtup roofing to working area.



BRIDGE ON CHICKAMAUGA DAM presents special problems of clearance and access.

Old Dam Sports New Bridge

Everett Scroggie
Bridge Design Engineer
Tennessee Valley Authority
Knoxville, Tenn.

From the time it was authorized in 1935, TVA's Chickamauga Dam had a bridge in its future. And now it has the bridge, a steel structure along the top of the dam.

Designers of the dam considered various arrangements for the future highway bridge. Studies were made for various arrangements of spans, for transfer of loads to the foundations, and for details of various parts of the dam so that some day a bridge could be constructed thereon. Results:

- The south embankment was made wide enough to accommodate a future highway of four lanes. Ample right-of-way was obtained for a connection with Tennessee State Highway 58.
- Anchor bolts were installed in certain areas for anchoring future bridge columns, and in one portion of the service bay the structural steel framing was designed for an assumed bridge load.
- Gate piers and spillway sections were designed for assumed bridge loads.
- Short concrete pedestals were constructed on the south lock wall for future column supports.
- Recesses were constructed in the north lock wall for future column bases.
- Some excess excavated material was placed on the north side of the diversion canal on the probable alignment of a future highway.

These items were nominal in cost and represented sound planning for the future. All items were not utilized, mainly anchor bolts, because of revision in the span lengths as discussed below.

• **State-federal bridge**—Public Law 562, passed by the 79th Congress, permits construction of public highway bridges upon dams owned or controlled by government agencies provided certain conditions are met. The highway department of the state in which the dam is located, jointly with the U. S. Commissioner of Public Roads, first determines and certifies to the agency-owner of the dam that the bridge is economically desirable and needed as a link in the state or federal-aid highway systems. The agency then determines if the bridge will be structurally feasible and will not interfere with the proper functioning and operation of the dam.

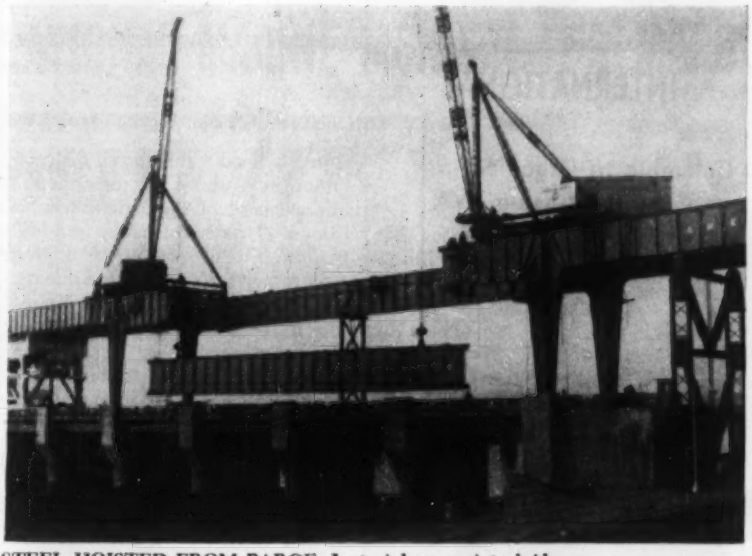
The state, the Bureau of Public Roads, and the agency then enter into an agreement concerning the design and construction of the bridge and approaches. Such an agreement was made on Dec. 18, 1947, among the Authority, the State of Tennessee, and the Bureau of Public Roads. All costs for design and construction are borne by the state and the Bureau of Public Roads. The Tennessee Valley Authority makes all designs and handles construction.

• **Design requirements**—The contract required the bridge to be designed along very definite lines: A two-lane bridge with 26-ft roadway; 5-ft sidewalk along full length on the upstream side and a 5-ft sidewalk along masonry portion of the dam on the downstream side; design for ultimate 4-lane width with a load capacity of H20-S16 in each lane; provision for stairways from bridge to Chickamauga lock and power house.

• **Special problems**—The construction of a bridge across a dam may at first appear to be a simple matter. The facts are, however, entirely to the contrary as the bridge must be planned so as not to interfere with the normal functions of the dam. As a result, the Chickamauga Bridge is a special design from abutment to abutment. Total length of the bridge is 3,468 ft 8 in.

The profile is determined basically from the requirement that the bridge must be far enough above the water level in the lock to provide navigation clearances and high enough to clear the two gantry cranes which are located on the deck of the dam for operation of the spillway and intake gates. Of these two factors, clearance over the gantry cranes was controlling, and a level gradient across the lock, spillway, and intake was a reasonable solution.

Approach spans for the bridge at both ends were established on 5% gradients. The north abutment was located by an economic comparison of the cost of bridge versus approach fill and also to allow room between the abutment fill and North Chickamauga Creek for one of the approach roads to the bridge. It is interesting to note that in the years between the construction of the dam and the construction of the bridge, the relative economics of bridge structure and earth fill changed to result in increasing the



STEEL HOISTED FROM BARGE—Last girder goes into bridge.

approach fill to an extent which resulted in shortening the bridge by 150 ft from the length originally anticipated. The location of the south abutment was determined by the fact that the highway fill at that point is on top of the existing earth dam and the top width of the dam limited the height to which the highway fill could be built.

The Chickamauga Dam receives hundreds of thousands of visitors each year. Many of these visitors will wish to view the project and its reservoir from the bridge. To provide for this, stair towers were placed at the end of the intake and on the north wall of the lock. These stair towers are convenient to the principal parking lots at the project and could be developed as transition points between the level central portion of the bridge and the sloping approach spans.

Plans for the Chickamauga project anticipate the future construction of a lock with a 110-ft-wide chamber adjacent to and on the south side of the existing lock. To permit construction of the future lock with a minimum of difficulty resulting from the existence of the bridge required that the span adjacent to the existing lock be of a length sufficient to span four of the spillway gates. The requirement for this long span then led to the adoption of only slightly shorter spans over the remainder of the spillway and over the intake and existing lock. On the north approach the span lengths were controlled largely by the requirements of crossing North Chickamauga Creek. After this span was worked out the others were developed as a balance of economic design and satisfactory appearance. At the south end the bridge is supported on bents of lesser height and shorter span lengths were adopted. Horizontal curvature and superelevation dictated the use of simple spans.

• **Special features**—Within this general layout are a number of special interesting features. The foundation for the span across North Chickamauga Creek is developed by extending the circular columns of the concrete bent well into solid rock. This design was adopted in preference to the usual spread footing which was not readily adaptable to the skewed and paved banks of the relocated creek.

The stair towers were developed as anchor positions for several spans in each direction from the tower. Considerable study was given to their design and a plan in which they were developed as heavy plate girders was finally adopted. Circular stair wells were provided at each end of each stair tower at the sidewalk level.

In a longitudinal direction the spans on the dam between the two stair towers appear to be rigid frames, but they could not be designed as such because of excessive longitudinal thrusts on the gate piers. They are simple or continuous spans with cantilever arms supporting other simple spans by hangers. Ingenious shear locks were developed for transmittal of lateral and longitudinal loads from the suspended spans to the cantilever arms and at the same time provide for expansion and live load deflection. The bases for the transverse rigid frames which support these spans consist of steel grillages set in recesses provided during the construction of the dam. Existing anchor bolts located in the recesses were utilized to anchor the grillages.

The alignment of the dam required that the south approach be not only on a gradient but also on a horizontal curve. The maximum superelevation of the 26-ft roadway was 12¼ in. Horizontal and vertical transitions are provided. Beginning at the south stair tower and going towards the south abutment, the normal crown is maintained on the left gutter until the superelevation equals the crown, then the gutter grade rotates about the centerline of roadway until the maximum superelevation is reached.

On the right the crown is taken out on a special transition in spans 19 and 20 with zero crown and zero superelevation at the centerline of bent S2. The superelevation transition begins on the right side at bent S2 and increases to a maximum at bent S8 which is the end of the horizontal spiral. All curves are related to the base vertical parabolic curve 488 ft in length and were derived mathematically with common tangents at all junction points. Regardless of care and judgement in establishing such curves, it is fully realized that some points on the grade may be unsightly when foreshortened in perspective. For this reason the construction specifications called for a check and inspection of the grades on the curbs and sidewalks on spans 19 through 31, inclusive, before the railing parapets are poured. After the parapets were poured, the metal railings were erected in correct position and inspected for possible distortions in perspective before the posts were grouted into final position. All gradients were found to be satisfactory.

Bridge and approaches are lighted with modern type mercury vapor luminaries.

The deck is provided with a complete drainage system having down spouts which discharge either into the reservoir or into connecting existing drainage systems.

Design anticipated that a major portion of the structural steel for the bridge would be received by barge and probably lifted directly from the barges to its place in the bridge. This procedure was actually adopted by the construction contractor, and the bridge girders as received at the project were some of the heaviest single pieces ever transported on the inland waterway system.

The bridge is complete except for some painting and clean-up work. It opened to traffic in October.

The bridge was designed by the TVA under the direction of C. E. Blee, chief engineer; R. A. Monroe, chief design engineer; and G. P. Palo, head structural engineer. Helpful suggestions and constructive criticisms were made by officials of both the Tennessee State Highway Department and the U. S. Bureau of Public Roads.

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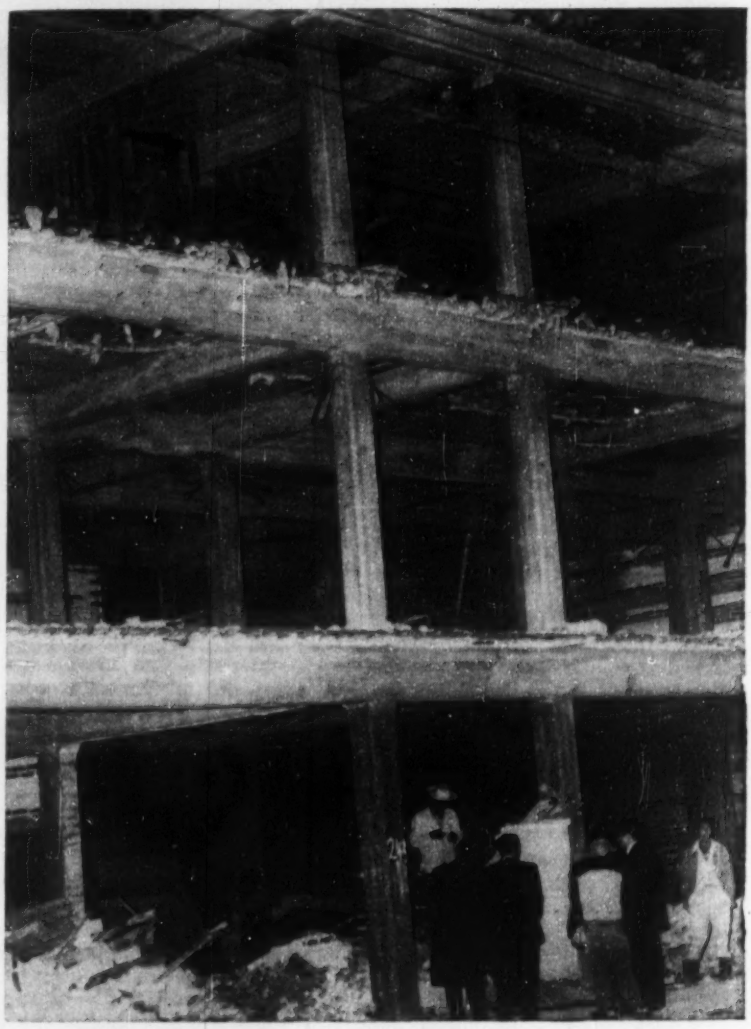
INTERNATIONAL

Colombia to Organize Its Own Small-Scale TVA

The Colombian government has contracted the services of David Lilienthal to organize a sort of TVA in the Cauca Valley around Cali.

The Lilienthal plan is to include the Cauca Valley and will promote in its area the generation, transmission and distribution of electric power. It will regulate flood control and irrigation. Other purposes are the reclaiming and improvement of the agricultural land, the use of water for public and industrial uses, the protection of water against poisoning and contamination, improvement in riverbeds, soil conservation and reforestation, exploitation of mineral resources, promotion of agriculture and cattle industry, and im-

(*Continued on page 42*)



Mexican building authorities get tough

When a Mexico City building contractor refused to follow zoning codes and built an apartment house ten feet nearer the street than it should have been, city authorities called in city workers who ripped off the front of the building while being protected from the contractor's wrath by a cordon of armed police. City building authorities took the drastic action to show contractors that all new building provisions must be adhered to meticulously. In the fashionable neighborhood of the above catastrophe, the authorities had ordered builders to leave ten feet from the sidewalk free for the planting of decorative borders. Demolishing all parts of the building extending over this planting area, the city workers inflicted $40,000 damages on the structure.

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DRIVE-IT 410 used to anchor huge marine corps monument in Washington, D. C.

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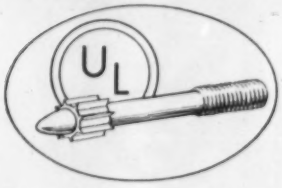
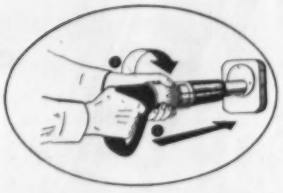


Drive pins are Underwriters' Laboratories approved.

Controlled Power. First and only tool which requires but one standard power load regardless of penetration desired. No need to buy and stock various strength power loads.



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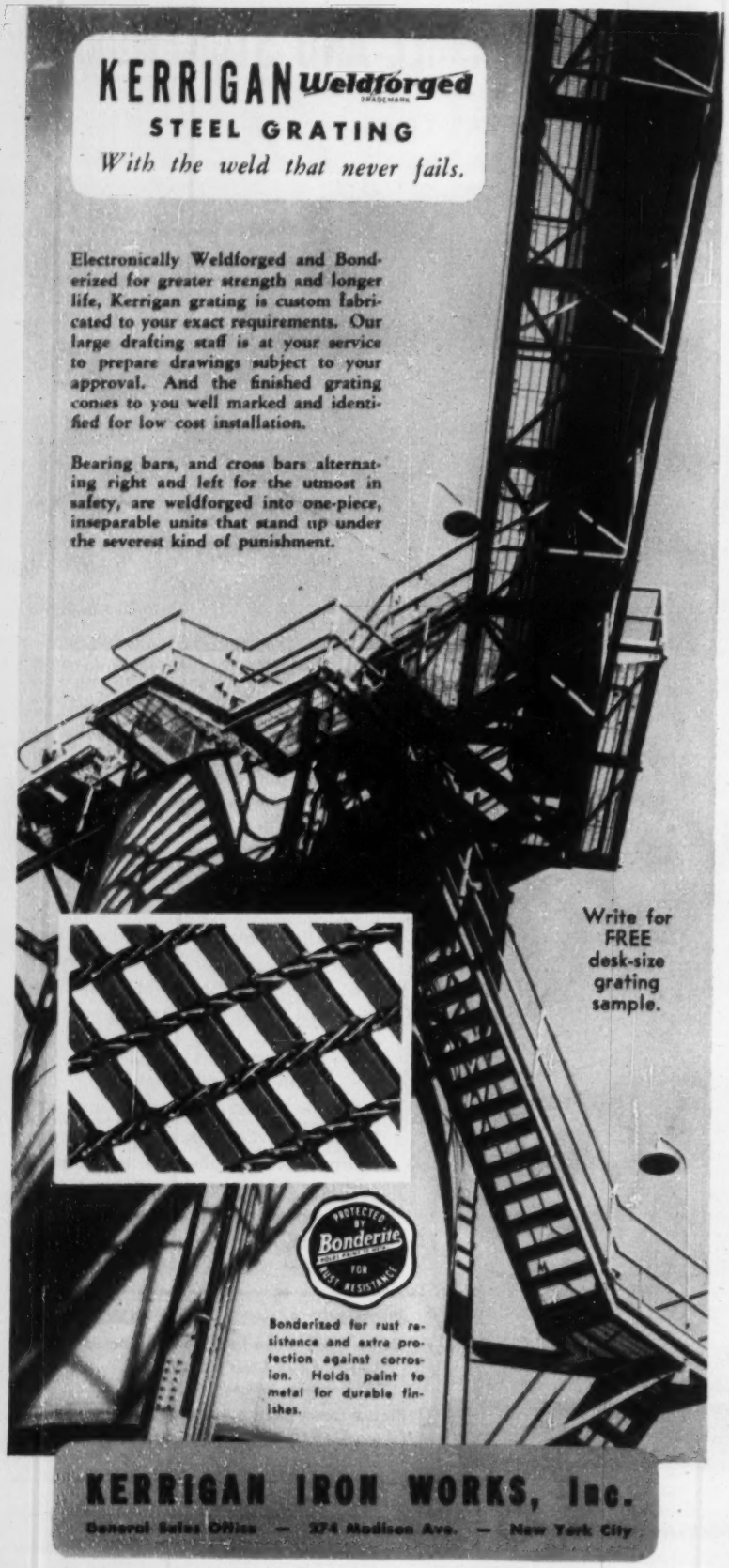
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provement of transport and communication systems.

A corporation for the execution of these plans have been founded. As a start the corporation is getting $200,000 in equal parts from the federal government and the Valle del Cauca Department.

New Dam To Add Biggest Power Block To B. C.

Within a few weeks British Columbia Electric Co. will award contracts for its $25-million hydro-electric project on the Cheakamus River, 70-mi north of Vancouver, B. C.

The project, expected to be under way before the end of the year, will harness waters of the river at a point in the rugged coast range 14-mi northwest of Squamish. It will give the utility an additional 142,000 kw of generating capacity, the largest block of power ever added to the system at a single stroke.

Plans call for an earth and rock dam measuring 2,000 ft along the crest and a maximum of 90 ft in height. A 7-mi tunnel will carry water to the powerhouse downstream. Penstocks at the lower end of the tunnel will drop water 900 ft to spin turbines of the twin 71,000 kw generating units.

International Briefs . . .

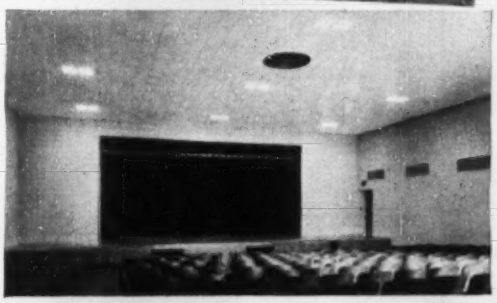
• **Greek port program** — Plans for Greece's $4.5-million modernization of its port of Piraeus have been made public. Construction will include two piers (cost: $2.5 million) to handle six foreign ships; two piers (cost: $730,000) for docking 10 home-line ships; docks (cost: $860,000) for unloading timber. The new docks will cover an area of 10,000 ft.

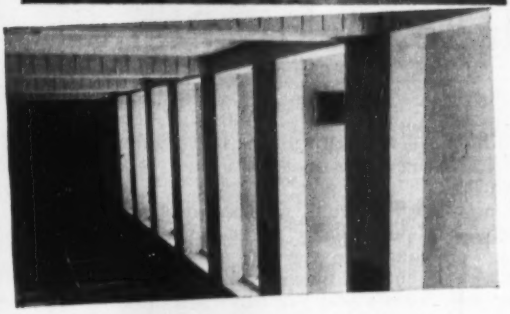
• **New B. C. bridge**—First Narrows Bridge Co., Ltd., plans to build a $17-million bridge linking the north shore of Vancouver, B. C., with the city proper. The new four-lane span would parallel the present Lions Gate Bridge (running 200 ft east of it) and would take care of northbound traffic on a one-way basis. The old bridge would handle southbound traffic.

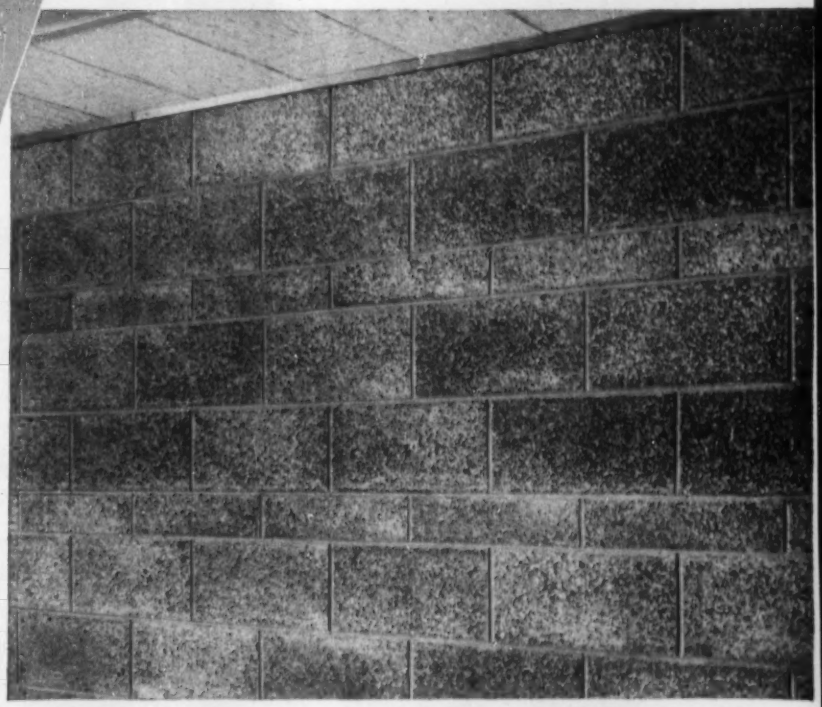
• **Hydro project preparations**—On the Battle River near Forestburg, Alberta, preliminary work is underway on a $6.5-million hydro-electric project for Canadian Utilities, Ltd. Initial construction—to start next spring—will include an earthfilled dam, power plant building and installation of a 30,000-kw generating unit.

Build Better with VIBRAPAC Block

Detail in the office of a well-known manufacturing plant — Vibrapac Block — 2 course 8" high and 1 course 4" high. (Unretouched photo)







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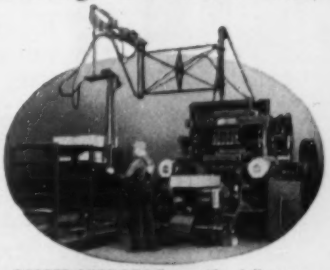

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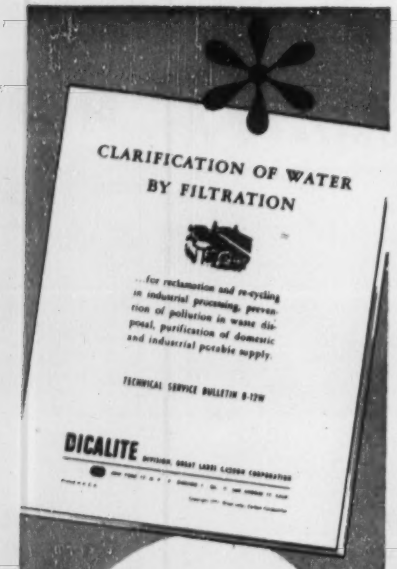
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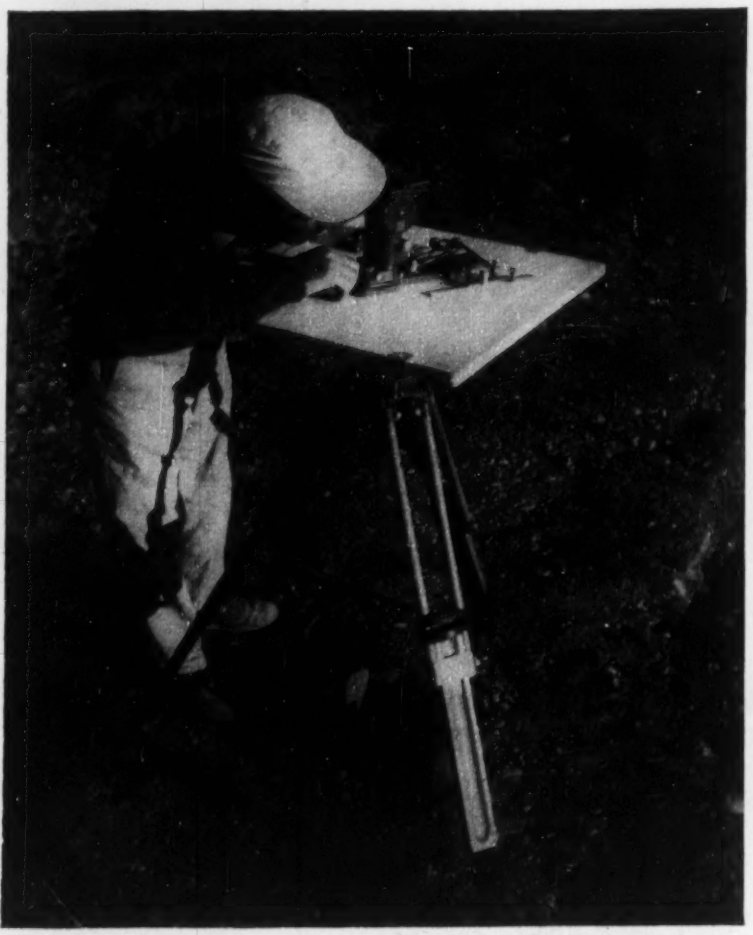


TOTALLY DIFFERENT in appearance, the RK alidade by Kern has an optical system that permits the use of a fixed eyepiece and also has a modern plotting device.

New Alidade Makes Plane-

Surveyors and mappers who've been exiled to the Siberias of the world might well flip their tripods when they get a look at their new traveling companion. The alidade has dropped the Victorian look and in the process some of its limitations. A brand-new optical system permits reading of horizontal and vertical distances without time-consuming calculations and a built-in drafting machine-type plotting device permits the observer to throw away his dividers and parallel rule.

The Kern RK has a 27-power vertical telescope fixed inside a central column and an eyepiece fixed at an angle of 30 deg for working comfort. Only the objective prism is tilted—backsights can be taken by simply flipping the prism through an angle of 180 deg with the rest of the instrument remaining stationary.

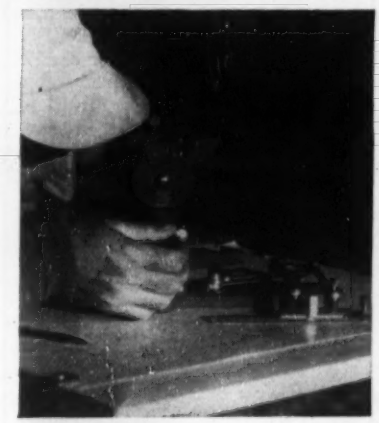
• **Slide rules unnecessary**—Besides an upright image of the target area there appear in the field of the telescope four slightly curved lines, a centerline, center cross and two stadia lines.

The intercept on a rod between the outer curves multiplied by a factor of 100 will give the corrected horizontal distance. The factor to be used in determining differences in elevation is indicated by tiny vertical lines engraved on the curve diagram plate. Two such lines indicate a factor of 20 which is applicable for slopes of

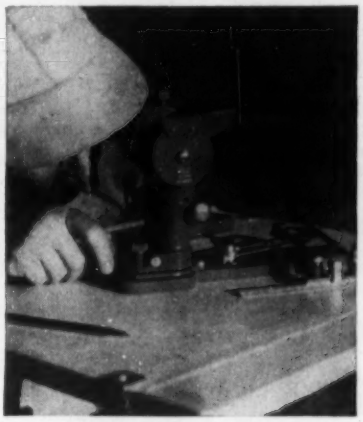
TRIPOD UNFOLDS, legs extend making a compact unit. Folded legs protect head.

INSTRUMENT IS HINGED for compactness too. Paper clamps slip over edge.

LEVELING is accomplished by means of two thumbscrews at rear of central column.



FOCUSING is internal, done with thumbscrew below objective prism setting disc.



HORIZONTAL TANGENT screw is immediately behind the leveling screws.

VERTICAL TANGENT screw is behind center column and below fixed eyepiece.

Tabling an Easy Task

0 to 12 deg. Five lines indicate a factor of 50 and appear when the objective prism is tilted for slopes of 12 to 27 deg. A single line appears when the slope is 27 to 40 deg and indicates a factor of 100.

When a slope of greater than 40 deg is encountered, the stadia lines are used in the usual manner. The vertical angle can be estimated to one minute and is read through the microscope mounted immediately above the eyepiece.

The curve diagram is engraved on a glass plate that automatically follows the movements of the objective prism. On a fixed glass plate, the vertical lines, center cross and short stadia lines are engraved. The whole device is so arranged that by pointing on a target, the target lines on the fixed plate and the curved lines on the moving plate appear at the same time without showing parallax.

Unlike many other self-reducing stadia telescopes the full field of view can be used by the observer at all times. Further, the curves intersect the view of the rod at relatively wide angles so that the rod need not be centered precisely. Measuring accuracy is approximately 1:1,000 for the distance measurements and for the differences of elevation; 1 cm when K equals 20, 2.5 cm when it is 50 and 5 cm when K equals 100.

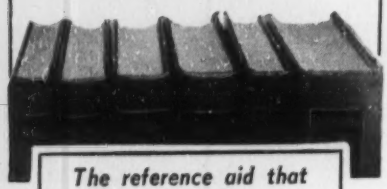
The objective prism is controlled by a knurled disc mounted on the right side of the central column. To the upper portion of this disc there is fixed a "rough" sight that enables the target to be brought into the field with a minimum of time and effort.

The rotating axis of the objective prism can be clamped in any desired position by turning the knurled knob at the top of the central column; however, the axis is not clamped directly by means of a screw but by a mechanism that applies constant pressure. This eliminates the risk of bringing too much force to bear on the axis and possible damage.

• **Plotting with accuracy**—Two pairs of parallel arms support a metal scale and plunger-operated pinpoint. When plotting a point the distance is measured off on the scale and the pin depressed—the parallel arms maintain

(*Continued on page 46*)

Save time and money on construction jobs



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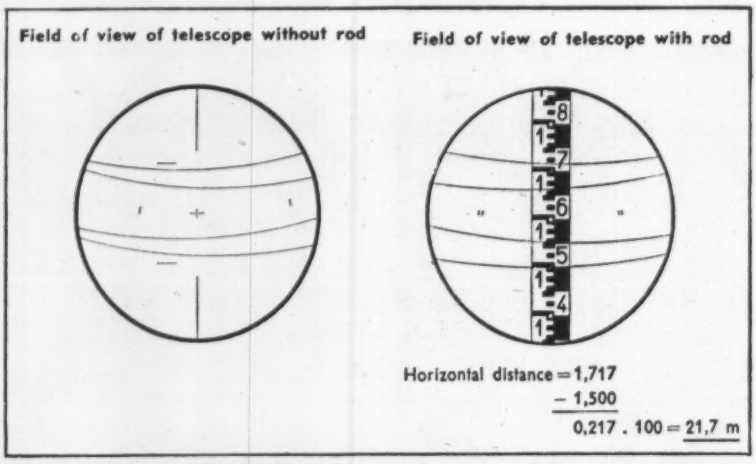


FINE VERTICAL LINES indicate factor to be used in determining differences in elevation. One line (left) indicates a factor of 100—two lines (right), 20.

the parallelism between scale edge and line of sight. Divider doodling is eliminated.

Four sets of interchangeable scales are included with the instrument—1-in. to 20, 40, 50 and 100 ft.

The instrument is packed in a metal case that is arranged to carry the accessories also. Accessories include four paper clamps, a plumb bob, sun shade, box compass with bulls-eye bubble, rod level, hex wrench, dust brush, adjusting pin and direction rule with extension. The direction rule clamps to either the box compass or the left side of the instrument.

Total weight of the instrument, case and accessories, tripod and plane-table head is about 26 lb. Price is $1,224.50 f.o.b. White Plains. KERN INSTRUMENTS, INC., 120 GRAND ST., WHITE PLAINS, N. Y.

Trucks Become Broken-field Runners

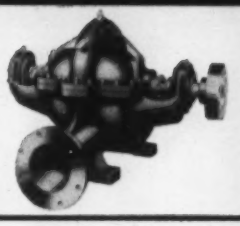
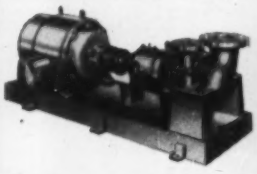
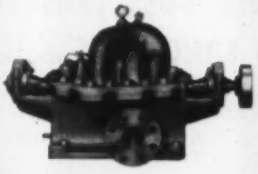
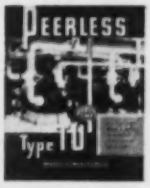
A new Swivel Frame makes it possible for the front and rear halves of a truck to rotate to either side independently. According to the manufacturer, the Swivel Frame keeps all wheels firmly on ground, no matter how rugged the terrain and thus increases truck maneuverability and eliminates frame twist. It is said that springs, steering mechanism, cab and body assemblies, and other parts that suffered from distortion in rough going are now kept free from damage.

(*Continued on page 48*)

5 Peerless Pump Designs

that squarely meet every WATER HANDLING REQUIREMENT

PEERLESS PUMPS

THESE ARE THE *Pumps*		ASK FOR *FREE* ENGINEERING BULLETINS
TYPE A AND TYPE AS GENERAL PURPOSE PUMPS Use these pumps in the widest range of water handling services. Single stage, horizontal split case design. Mechanical shaft seal construction available in sizes up to 4" (Type AS). Heads: up to 300 ft.; capacities up to 70,000 gpm.		*Ask* FOR BULLETIN B-1300 & B-1350
TYPE PR AND TYPE PRS HIGH TEMPERATURE, HIGH PRESSURE PUMPS Horizontal center-line-mount pumps with packing gland or mechanical shaft seal construction. End or top suction designs. Heavy duty pumps for heads up to 675 ft. Capacities: up to 1000 gpm and temperatures up to 850°F.		*Ask* FOR BULLETIN B-1605
TYPE PE AND TYPE PB END-SUCTION PUMPS America's broadest line of economical, general purpose pumps. Horsepower range from ¼ to 150. Head range to 260 ft. Capacities up to 5500 gpm. Easy to buy, apply, install and maintain. Tens of thousands in use.		*Ask* FOR BULLETIN B-2300
TYPE TU AND TYPE TUT MULTI-STAGE PUMPS 2,3,4 and 5-stage designs for supplying, circulating and boosting water and other liquids in moderate capacities against medium and high heads. Durable and dependable in operation. Heads up to 1660 feet; capacities up to 3000 gpm.		 *Ask* FOR BULLETIN B-1400
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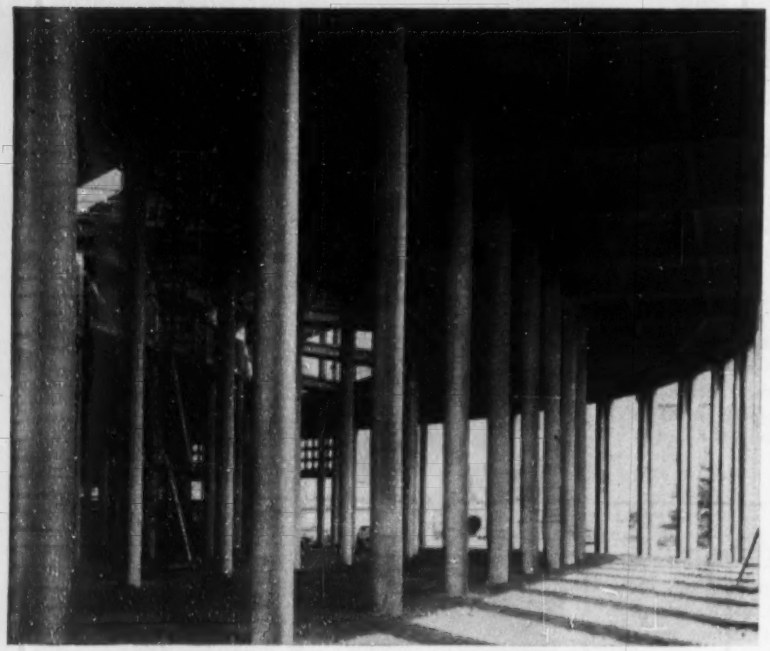

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Columns like this cost less to erect!

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Concrete columns supporting the decks of the Louisiana State University stadium were formed with low cost SONOTUBES.

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Two New Sandwich Wall Panels Porcelain Enameled

Two new double wall panels have been designed for use in any fenestration or spandrel system of curtain-wall design. A Type A panel is manufactured in sizes up to 12 sq ft with thicknesses from 1½ to 3 in. It has glass fiber insulation and an air space to reduce condensation.

A Type C panel is produced in sizes up to 20 sq ft with a minimum thickness of 2½ in. Besides the glass fiber and air space, it has a special gypsum-base backing cast integrally with the outer panel to produce flatness, rigidity and additional acoustical insulation.

The outer face of the double wall panel is architectural porcelain fused to steel; the inside panel face can be baked prime paint finish or porcelain enamel. The panels can also be fabricated of aluminum and stainless or galvanized steel.

A wall of the panels weighs only 6 to 8 lb per sq ft and is 2 to 3 in. thick. The light weight aids fast erection and they can be installed from inside, eliminating scaffolding and over weather delays.

The glass fiber insulation is held in place mechanically to keep it from shifting or settling. The U factor for the Type A panel is 0.23 and for the Type C panel, 0.22.

The panel design provides a "breathing" space that is said to minimize condensation by allowing the atmosphere there to adjust easily to the outside temperature. Whatever condensation is formed escapes through weep holes in each unit.

With a plastic gasket between, inner and outer panel surfaces are mechanically fastened together with self-tapping stainless steel screws. No adhesives are needed and, when erected, the entire wall is reported to be weather-tight. The gasket, assembled on the panel with corners fused shut, is the weather barrier along the panel joints. DAVIDSON ENAMEL PRODUCTS, INC., 1100 E. KIBBY ST., LIMA, OHIO.

PUBLICATIONS

Loaders—A 4-page booklet describes the new Models C-27 and C-30 Sierra loaders. Job photos illustrate typical applications of the loaders, highlighting such features as one-man operation, blending of bank materials as loaded and other advantages on earthmoving projects. C & D MFG. CO., PERKINS, CALIF.

Pile driver generator—A steam generator built expressly for pile-driving service is described in a new bulletin. The booklet includes complete specifications and overall dimensions as well as an explanation of the design and its distinctive features. A sectional drawing shows the forced recirculation water system that is pointed out as a key feature to the generator. The bulletin also includes job illustrations showing how contractors have set up the unit with various convenient mountings. Bulletin 63. MCKIERNAN-TERRY CORP., DEPT. 17, 15 PARK ROW, NEW YORK 38, N. Y.

Masonry protection—A new brochure describes the Penetryn System, Inc., an engineering, research and construction organization specializing in preserving, strengthening and restoring structures built of masonry. Some of the methods used by the organization are described briefly and this is followed by several case histories wherein the company was successful in restoring valuable structures. Included in the case histories are a warehouse, railroad bridge, power line tower foundations, stack linings, dams, buildings, bridges and other structures. THE PENETRYN SYSTEM, INC., 2294 SCRANTON RD., CLEVELAND 13, OHIO.

Aluminum windows—An 8-page technical catalog contains information about a new model horizontal sliding aluminum window. The catalog includes a cut-away illustration of the new window showing its features and also has a chart showing 50 standard sizes. Also included are technical drawings, specifications, guarantee and photos of typical installations in various parts of the country. Catalog C. PETERSON WINDOW CORP., 1377 EAST 8 MILE RD., FERNDALE 20, MICH.

Heating systems—Five major types of steam heating systems, with and without control, and a full line of valves, traps and steam power specialties are described in a new catalog. Bulletin 110. ILLINOIS ENGINEERING, 2035 S. RACINE AVE., CHICAGO 8, ILL.

FIBRE TUBES

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Construction of slab showing SONOVOIDS—
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Lower cost per square foot resulted when SONOVOID Fibre Tubes were used in the construction of lightweight, fireproof concrete slabs for roof and floors of Windsor, Conn. High School.

Contractors everywhere have found out that by using SONOVOIDS less concrete and less reinforcing steel is required and yet the same structural strength is obtained.

Easy to handle, simple to put in place, low cost SONOVOID Fibre Tubes have been specifically developed for use in concrete bridge deck, wall, floor and roof slabs. For prestressed and poststressed precast units, too.

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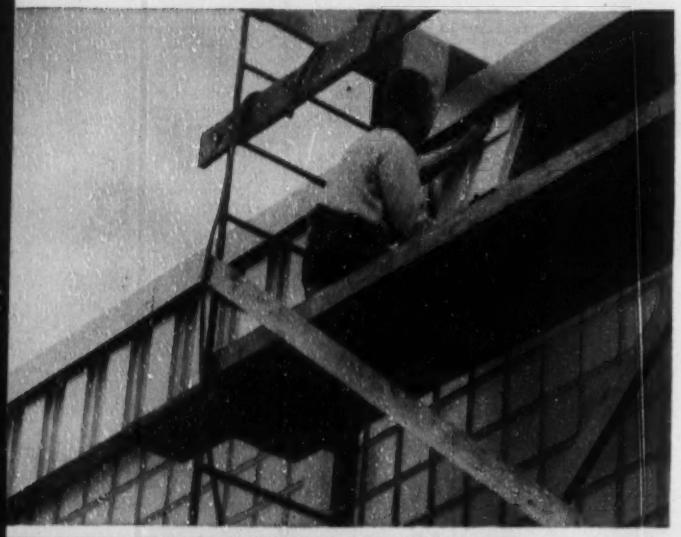
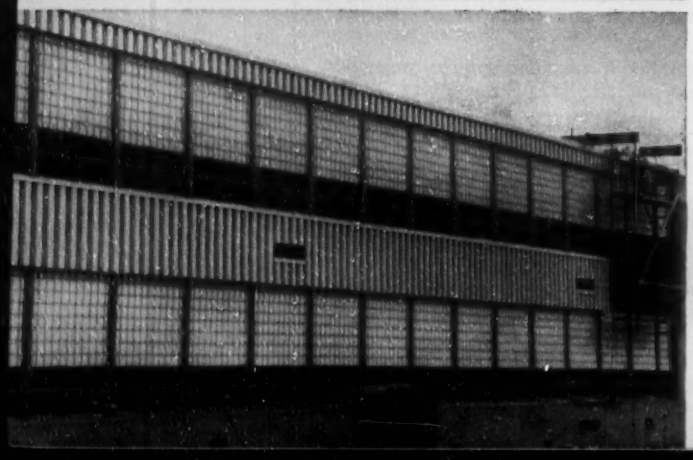
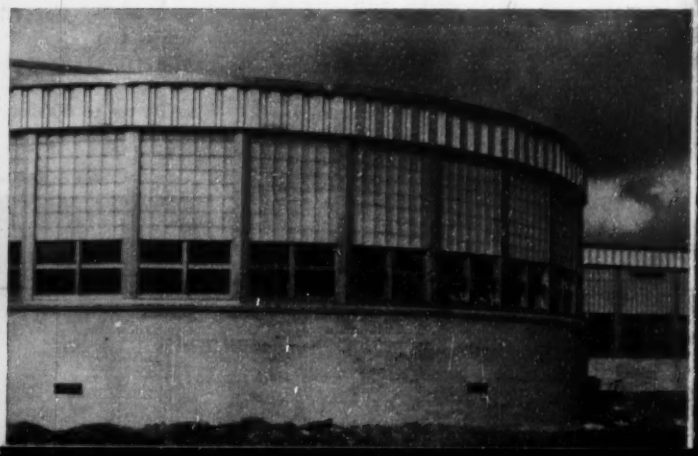
New EDISON JUNIOR HIGH SCHOOL* takes full advantage of the beauty and utility







Here is a fine, spacious, new junior high school building that sets a precedent in design and construction. For the architect has made extensive use of one of today's most beautiful and most functional building materials—Stainless Steel.

On the exterior of Edison Junior High School, insulated panels of Stainless Steel form the spandrels and the head panels. The spandrels are of 20 gage Stainless Steel, one foot wide and four feet high with six-inch face square corrugation. The head panels are one foot high. Panels are insulated with one and one-half inches of Fiberglas and attached to the structural framework with clips.

The combination of Stainless with masonry and glass block makes an extremely attractive building. But the benefit of Stainless panel construction doesn't stop there. Construction with the panels was fast and went forward in all types of weather. More complete utilization of floor space was possible through this curtain wall type construction. Maintenance on the Stainless Steel will be negligible and life will be long.

These panels are extremely efficient from a heating standpoint. They have a low rate of thermal transmission (or "U" factor).

Stainless Steel also was used in this school for sills, mullions, windows, door canopies and trim, blackboard and tackboard frames, doors and door frames, column covers and other items of interior trim.

If you have a new school in the planning stage, now is the time to think about Stainless Steel and its many benefits. And think in terms of USS Stainless Steel. For more information on Stainless Steel panel construction, mail the coupon at right. If you like, we will be pleased to have one of our representatives call.

# of Stainless Steel

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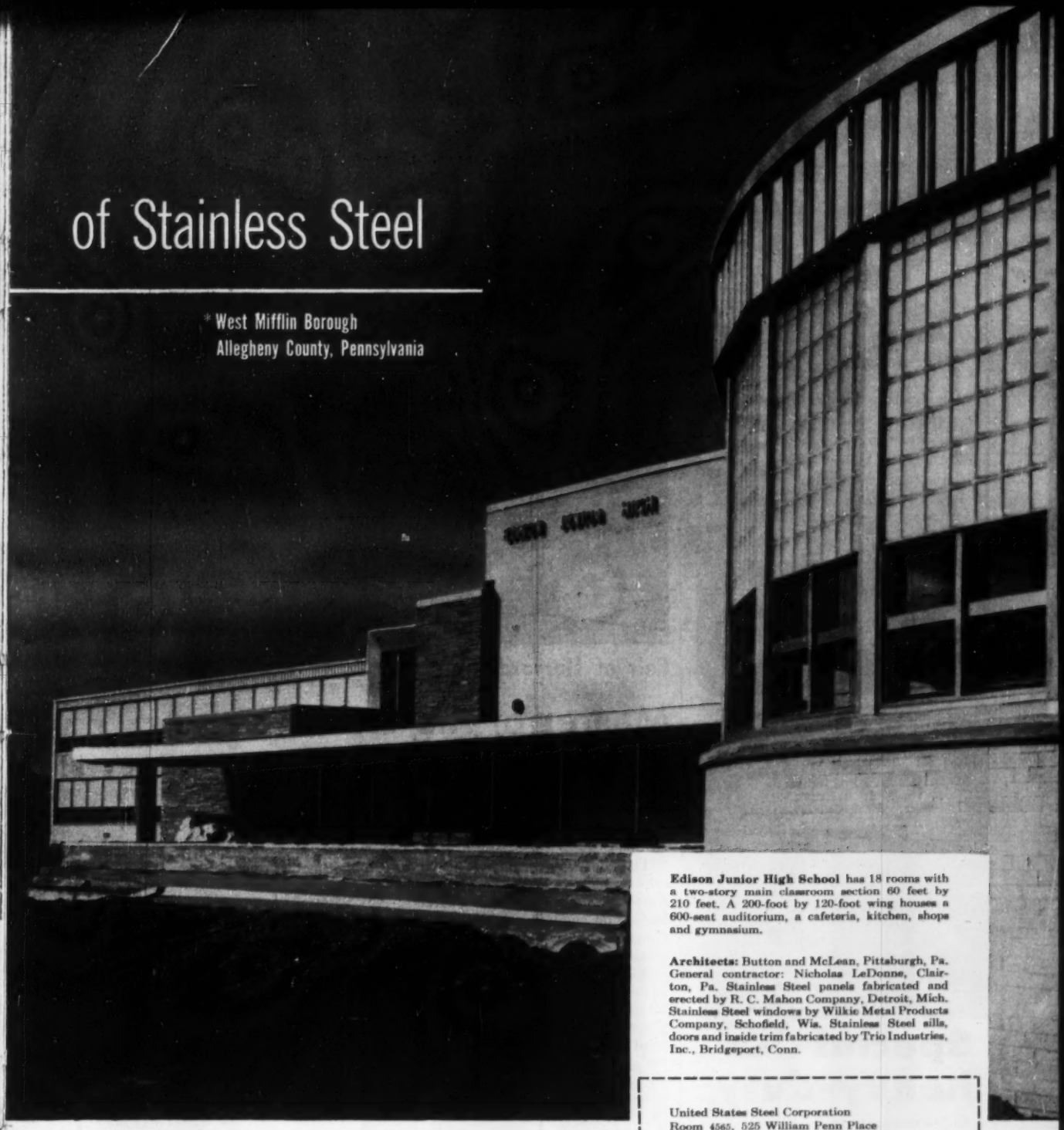

Edison Junior High School has 18 rooms with a two-story main classroom section 60 feet by 210 feet. A 200-foot by 120-foot wing houses a 600-seat auditorium, a cafeteria, kitchen, shops and gymnasium.

Architects: Button and McLean, Pittsburgh, Pa. General contractor: Nicholas LeDonne, Clairton, Pa. Stainless Steel panels fabricated and erected by R. C. Mahon Company, Detroit, Mich. Stainless Steel windows by Wilkie Metal Products Company, Schofield, Wis. Stainless Steel sills, doors and inside trim fabricated by Trio Industries, Inc., Bridgeport, Conn.

United States Steel Corporation
Room 4565, 525 William Penn Place
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- ☐ Please send me literature on Stainless Steel panel construction.
- ☐ Please arrange to have fabricators of Stainless Steel wall panels send me literature on their particular type of construction.

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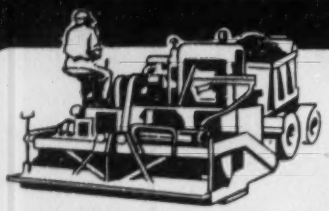

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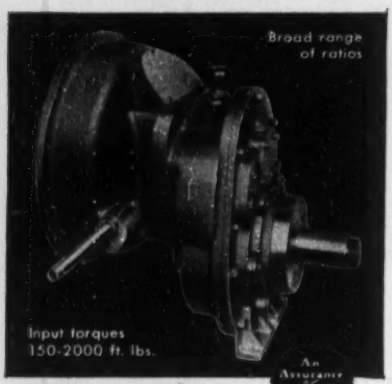

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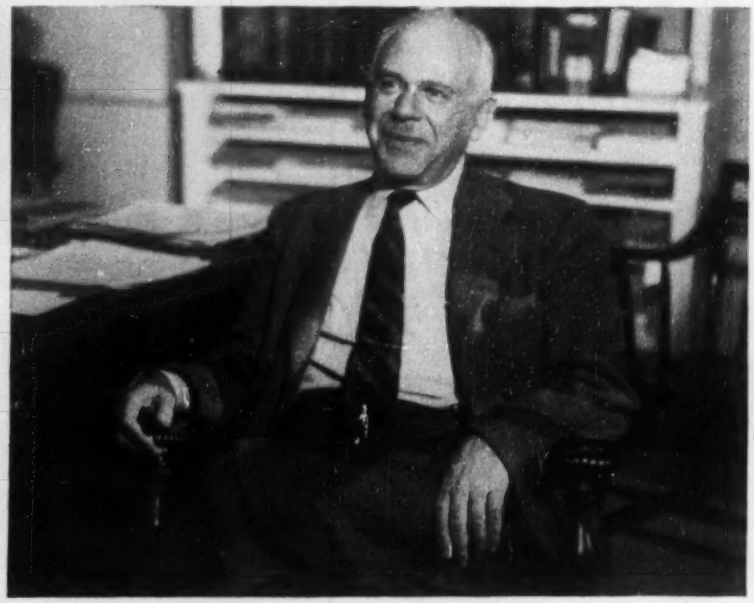

Fair of Harvard—

Master of the House—and Much of What He Surveys

A. J. Fox, Jr.
Associate Editor

This story is dedicated to the proposition that few, if any, contemporary Americans have exerted a greater influence on engineering than Harvard's Gordon Maskew Fair. Let those who would challenge first read on.

If it is so that few have done more to influence the profession than this 60-year-old professor of sanitary engineering, then his accomplishment must first of all have been great; second, its effect must be far-reaching.

Gordon Fair's accomplishment has indeed been great, though it may not be evident in monumental projects—the usual evidences of engineering genius. For Fair has worked not in steel or concrete, not predominantly with stresses or flows. His work has been with the minds of men and with the fundamentals they apply.

His only material contributions are his writings; and certainly the latest of these is monumental. "Water Supply and Waste-Water Disposal" (See Books, p. 58), co-authored by Fair and J. C. Geyer and just recently published, is a writing project conceived nearly 18 years ago. Full worth of the finished product, as both text and reference work, won't be fully appreciated for some time.

There are other great American professors in engineering. Some have produced great books. If the case for Gordon Fair's influence on his profession were to stop here, it would be less than complete.

• **Far-reaching effect** — This man is basically a teacher, and just as surely as the product of teaching is learning, best evidence of teaching success is in the students taught. And here we have the strongest proof that Gordon Fair's mark on the engineering profession is perhaps unsurpassed.

Consider the stature of the boxed lists of names and positions; these are some of the more than 700 graduate students who have studied under Fair.

If this partial list were but ex-students of Fair's it could be concluded that he has had his influence on a good many well-placed persons in the field. But they are, almost to a man, more than ex-students; they are devotees, confirmed in their continued devotion to the professor and

AUTHOR FAIR hefts the tome it took 17 years to produce (see Books).

thus still to a degree under his influence.

• **Unforgettable character** — What manner of man is this Gordon Maskew Fair, personally and professionally?

As a person, he can appear pompous. He can appear aloof and hard to meet. Closer up, what looked like pomposity is dignity; the aloofness is individuality.

Born and schooled in South Africa, Professor Fair retains a British air about him. Articulate and distinguished, he is the professor type from the moment he opens his mouth—an even before.

Looking back on 30-odd years of teaching and professional activity he counts among the more important developments the renaissance of sanitary engineering to greater public interest. Today's more crowded world demands higher living standards and better use of resources, the type of things sanitary engineers can be trained to provide. He notes, too, with satisfaction, the return to more basic, more fundamental research in the universities and in the state and federal research institutions.

Gordon Fair is a true scientist, described by an ex-student as never "mixed up in fads." He is conservative, but not extremely so, in his science. In his politics, he was a New Dealer.

• **Devoted to students**—Perhaps his greatest present pleasure is derived from his responsibilities as Master of Dunster House, one of the seven "colleges" in which undergraduate upper-classmen at Harvard are housed and grouped for social, intramural and tutoring purposes. This system (also used at Yale) is an adaptation from

(Continued on page 54)

One Measure of a Man: Fair's Students

ENGINEERS IN STATE HEALTH DEPARTMENTS: About 200, including Beck (Ala.), McDonald (Ark.), Stead (Calif.), Gahr (Colo.), Lee (Fla.), Boston (Ga.), Clare (Idaho), Houser (Ia.), Metzler (Kan.), Brinck (Mont.), Fletcher (N. J.), Svore (N. D.), Everts (Ore.), Stephens (S. C.), Farrell (Tenn.), Tracy (Vt.), Jensen (Wash.), Muegge (Wis.) and Williams (Wyo.).

IN U. S. PUBLIC HEALTH SERVICE: About 40, including Green, Hanson, Hopkins, LeVan, Poston, Schwob, Stevenson, Towne, Wieters and Wiley.

IN OTHER U. S. AGENCIES: AEC (Morton and Hatch); Foreign Operations Administration and Armed Forces (Stone, Fox, Caldwell, Blanks, Aldridge and Dahl). **About 40,** in all.

CONSULTANTS: About 70, including partners in firms of Camp, Dresser & McKee; Greeley & Hansen; Hazen & Sawyer; Malcolm Pirnie; Whitman & Howard.

PROFESSORS: About 50 at 27 U. S. colleges and universities and 13 institutions abroad. Group in U. S. includes such senior men as: Gotaas (California), McKee (Cal. Tech.), Brown (Dartmouth), Thomas (Harvard), Geyer (Johns Hopkins), Boyce (Michigan), Snell (Mich. State), Edwards (N. Y. U.), Okun (N. C.), Baird (Northeastern), Logan (Northwestern), Stapley (Okla. A. & M.), Howland (Purdue), Campbell (R. I. State), Snow (Rutgers), Burden (Tufts), and Heiple (Utah).

INTERNATIONAL & FOREIGN: About 200, including Baity, chief engineer of World Health Organization; Burden and Sasse of Rockefeller Foundation. About 90 nationals in Latin America; 40 in Asia; 20 in Europe and Canada.

Plus a score each in industry and water & sewage works management.

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Weld-Crete has equal bonding permanence all climates, all surfaces, all sorts of conditions. When used with quick setting cement topping you can lay new floors, ramps, driveways, etc. one day and run heavy truck traffic over them the next. Get facts from your building materials supply dealer or write Larsen Products Corp., Box 5756-I, Bethesda, Md.

TYPICAL **WELD-CRETE** APPLICATION

National Brick Co., Terra Cotta, D. C.

Here Weld-Crete was used to bond new ¾" concrete topping directly to old, badly chipped and spalled floor slab which had been subjected to ceaseless heavy truck traffic. Plant shut-down time eliminated as Weld-Crete enabled National's own mechanics to do job over week end.

In a Hayward, there's no contact between the closing mechanism and the gravel or other material handled. To be sure—this "no contact" feature is only one advantage. But a very important one to you—since it means much less wear, reduced upkeep, and a significant dollar-saving in bucket maintenance.

Note also, Hayward's extreme simplicity, the smaller number of parts—and all easily accessible—the larger closing sheaves particularly shaped to minimize rope wear, the extra large load capacity.

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Cambridge and Oxford, where colleges actually have separate faculties. At Harvard, Dunster House is home and a center of activity for students pursuing every available course of study. Tutors—faculty members drawn from a variety of fields—have quarters in the House and are available to students in an informal kind of "education across the dinner table," as Gordon Fair has phrased it.

Fair's place in all this is as master, his home a red-brick mansion facing the Charles River and directly connected through his study with the great oak-paneled dining hall in which he and the students eat and converse on the problems of the moment, whether they be theology, sociology, house rules or an intramural sports event.

Gordon Fair came into this very attractive post as master of Dunster House in 1949 when a major organizational change in Harvard's graduate school did away with his former post as Dean of the Faculty of Engineering. At that time, engineering courses at Harvard were put under a Division of Applied Science, on the theory—supported by Fair—that physics is physics whether you are working with soils or volts.

• **And devoted to principles**—This is the key to Fair's thinking and his teaching. His forte is in the fundamentals. He is a firm believer in teaching principles rather than dwelling on how to apply them. And he has had the satisfaction in recent years of seeing many educators return to his views. "Teaching now reaches into the fundamental sciences. . . . The sanitary engineer has become the interpreter of those sciences, rather than the practitioner of repetitive techniques," he says.

Whether this emphasis on principles in educating engineers should go so far as to wipe out engineering as a labeled body of courses in the Harvard graduate school curriculum is open to question. Whether the move has gone too far is a problem for the visiting committee which advises on matters of curricula. But Harvard's future in engineering education will also be influenced by Fair—as has its past.

Since 1922 continuously, and for an earlier 3-year interlude, Gordon Fair has taught sanitary engineering subjects at Harvard. For nearly all of that time his personality has dominated the picture there. Even now, though he teaches but one course in the fall, one in the spring, it is Fair—and not his capable associates—who most greatly impresses the student.

• **A force in the profession**—Recently, with his new book a prime concern and Dunster House the pet concern of both him and Mrs. Fair, the professor's presence in the profession has not been so strongly felt as in earlier years. He may have lost some steam for some of his earliest interests since his days as president of both the New England Sewage Works Assn. and the Boston Society of Civil Engineers, and winner of medals and awards in the New England Water Works Assn. and the American Water Works Assn.

His lessened activity in these organizations might be attributed in part to his belief that the profession has too many conventions. Lately, he has stayed away from them, and he is a big enough individual to get away with it without many eyebrows being raised. He has, in recent years, learned how to slough off burdensome entanglements.

But, for the most part, his participation in professional society activities has fallen off—since the war—due to devoting more time to consulting.

Fair believes one should teach or consult, and he chooses to teach. The consulting he does is of the unremunerative, public-service type, mostly for high-level agencies of government. To wit: chairman of the Public Health and Sanitation Study Section, National Institutes of Health; director of the Commission on Environmental Hygiene, Armed Forces Epidemiological Board; consultant, Research and Development Board, Department of Defense.

For his work as a member of the Committee on Sanitary Engineering of the National Research Council, Gordon Fair won the President's Certificate of Merit.

• **International influence** – A significant development during Fair's career has been the exportation of U. S. sanitary engineering know-how as part of a broad and growing effort to assist under-developed areas of the world.

First, he was assistant director of sanitation for the League of Red Cross Societies, organized in Geneva in 1921. This organization was forerunner of the health section of the League of Nations—an effort which got nowhere. Finally, there developed the World Health Organization, currently flourishing within the United Nations, with Fair's first (the coun-

(*Continued on page 56*)

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try's first) PhD sanitary engineer at its helm, Herman G Baity.

Meanwhile, Professor Fair gave his energies to the Institute of Inter-American Affairs and its efforts toward health through engineering in Latin America. In this work he is generally conceded to have helped shape policies and provide patterns for what is now the Foreign Operations Administration under Harold Stassen. Not the least of his influence along this line was exerted as consultant to the Rockefeller Foundation from 1945 to 1952.

• **Advantage of station**—Often from behind the scenes, and especially in recent years, Gordon Fair has had an immeasurable influence on all of civil engineering through his personal power to name men for jobs—and find jobs for men. This influence of his as a manipulator of men's fortunes is not limited to the roster of his ex-students. The list of his students above is intended only to be illustrative of the product of his teaching. A list of those whose careers he has influenced—with or without their knowledge—would extend beyond Harvard men.

Webster defines influence as power arising from station, excellence of character or intellect. Gordon Fair has held sway for 30 years. Is his influence on the profession exceeded?

Receives French Decoration

E. S. Tillotson, vice president, Grove Shepherd Wilson & Kruge, Inc., general contractors, New York, was decorated Oct. 29 by the French government for his work as manager of the Steers-Grove contractor combine that has just completed the French-U. S. naval base at Port Lyautey, Morocco.

Of his 37 years as a construction engineer since his graduation from Rensselaer Polytechnic Institute, Mr. Tillotson has spent 14 on foreign assignments.

Men and Jobs Briefs . . .

• **Careers—D. M. Forester** heads up the Yellowstone-Bighorn Projects Office, Bureau of Reclamation, Cody, Wyo., after consolidation of the Billings (Yellowstone) and Cody (Bighorn) projects offices . . . **Albert R. Purchase** succeeds **Arch M. Snow** (retired Oct. 31) as district engineer, U. S. Bureau of Public Roads for Vermont . . . **Lt. Col. David S. Parker** has become executive officer of the

Portland, Ore., District, Corps of Engineers . . . **John M. Toups** leaves Charles P. Morgan and Associates to become city engineer for Seal Beach, Calif.

• **Business**—**T. D. Landale,** formerly senior field engineer of M. W. Kellog Co., Tuscola, Ill., becomes highway design engineer for Browne, Roberts & Associates in Marion, Ohio . . . **Jack Singleton,** who recently retired as chief engineer of American Institute of Steel Construction, has opened a consulting office in Omaha, Neb. . . . **Albert W. Shoemaker,** formerly chief architectural engineer for Ford, Bacon & Davis, Inc., has been appointed architectural engineer for Fletcher-Thompson, Inc. . . **John D. Griffiths,** for eight years district engineer for American Institute of Steel Construction, is now chief engineer for Gate City Steel Co. in Boise, Idaho.

• **Associations**—New chairman of the North Carolina section of American Water Works Association is **Stanford E. Harris** of Winston-Salem . . . **T. F. Bradshaw** of Wilmington was elected president of the North Carolina Concrete Masonry Association . . . **James R. Townsend,** Greensboro, N. C., city manager, was appointed by Gov. Umstead to North Carolina's Water Resources Committee. . . . **H. M. Tice,** formerly chief materials officer at Montana's Hungry Horse project, goes to Uhl, Hall and Rich for similar job on St. Lawrence Seaway power work. . . . New president of North Carolina League of Municipalities is **H. L. Burdette,** city manager of Hickory, N. C.

• **Education**—**Prof. Robert F. Edgar** moves from head of department of civil engineering to assistant dean, University of Pittsburgh school of engineering. . . . **Emil A. Gramstorff,** a faculty member of Boston's Northeastern University since 1921, becomes dean of the graduate division, College of Engineering . . . Governor Wethersby appoints **J. S. Watkins,** Lexington consulting engineer, to the University of Kentucky board of trustees.

• **Retirement**—**Arthur L. Ward** as Mason county engineer, Shelton, Wash., after some 40 years of public service. . . **R. A. C. Henry** as special consultant to Department of Transport on St. Lawrence Seaway matters and as member of St. Lawrence River Joint Board of Engineers, after a quarter of a century of association with St. Lawrence projects.

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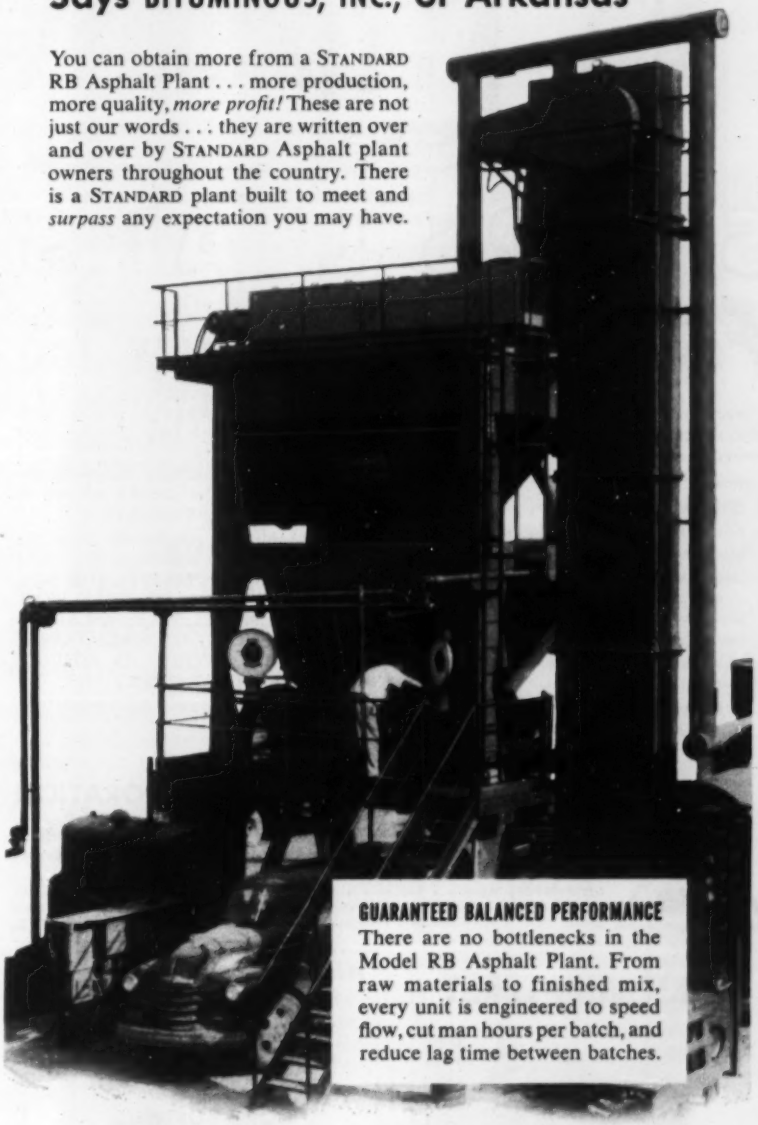

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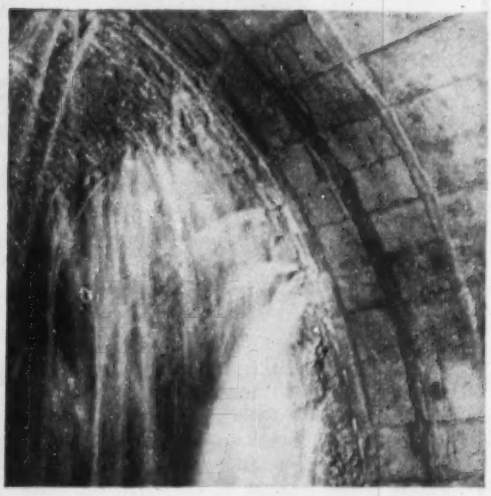

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BOOKS

Water: Supply and Disposal

WATER SUPPLY AND WASTE-WATER DISPOSAL—By Gordon M. Fair and John C. Geyer. 973 pp. John Wiley & Sons, Inc., New York 16, N. Y. $15.00.

Gordon M. Fair (see also p. 52) was first approached about writing this book in June of 1937. His first reaction was to suggest to the publisher that Prof. Abel Wolman of Johns Hopkins should do the job. But in 1938, he agreed to write a book, a 200-page volume.

The original idea has long since been lost sight of; John C. Geyer, now professor of sanitary engineering at Johns Hopkins has been at work as co-author with Fair since 1939; and between them, the authors have worked intermittently through interruption by World War II and post-war preoccupations with research, until finally this long-awaited book has been produced.

The resulting monumental volume is intended for the student, whether in school or in practice. It is, say the authors, a book for study, not for reading. It is a book to be used.

Undergraduate courses will doubtless use it, for selected readings if not as a text. Graduate courses are already using it.

For the practicing engineer, it is a compendium of the principles of water supply and waste-water disposal. In studying any one of its 30 chapters, he will come away rewarded not with a precise answer to his problem, but rather a fuller understanding of the nature of the problem which should make its solution more evident.

This volume has used no photographs. The authors leave description of materials and equipment to manufacturers catalogues; they assign responsibility for presenting methods of construction and advances in structural design to current journals. Drawings and formulas are used, and examples there are aplenty.

Throughout the book the authors have consciously co-related water supply and water disposal as interdependent. However, it is possible for the user of the book to separate one from the other without loss.

With chapters on statistical analysis, hydrology, groundwater, water chemistry (by John Carrell Morris) biology, self-purification, industrial water and wastes, rural supplies and swimming pools, this book is as broad as it is deep. Full appraisal may be long in coming, but will come from its users.

New Engineering Books

FOREIGN BOOKS in the field of civil engineering published recently are as follows: From the publishing house of Springer-Verlag, Molkerbastei 5, Vienna, Austria; HYDRAULIK, by J. Kozeny ($21.00); LEHRBUCH DES STAHLBETONBAUES, by Adolf Pucher ($7.60); FLACHENTRAGWERKE, by Karl Girkmann ($15.80). From the Berlin office of Springer-Verlag (Reichpielschufer 20, Berlin 35), JAHRBUCH DER HAFENBAUTECHNISCHEN GESELLSCHAFT (DM 60.00); DER DAMMBAU, by Karl Keil (DM 69.00); ROHRHYDRAULIK, by H. Richter (DM 34.50). From Berlinger Union, Marienstrass 13, Stuttgart, Germany, SPANNEBETON, by Hans Moll (DM 48.00). From Kirschbaum Vorlag, Bielefeld, Germany, SCHRIFTTUM UBER BODENMECHANIK, by H. Detenmann. From the Royal Institute of Technology, Stockholm, Sweden, SCHUBFESTIGKEIT UNO SCHUBBEWEHRUNG DER BETONBALKEN, by Carl Forssell. From Editions Eyrolles, 61 Boulevard Saint-Germain, Paris V, EXECUTION DU BETON PRECONSTRAINT, by L. Bourgine (1,350 F). From the Libreria Editrice Politemica, Milan, Italy, DIGHE E TRAVERSE PROGETTO E CONSTRUZIONE, by Felice Contessini.

MODERN PHYSICS FOR THE ENGINEER—Edited by Louis N. Ridenour. 499 pp. McGraw-Hill Book Co., 330 West 42nd St., New York 36, N. Y. $7.50.

STRENGTH & RESISTANCE OF METALS—By John M. Lessells. 449 pp. John Wiley & Sons, 440 Fourth Ave., New York 16, N. Y. $10.00.

A GUIDE TO MODERN MANAGEMENT METHODS—By Perrin Stryker. 300 pp. McGraw-Hill Book Co., 330 West 42nd St., New York 36, N. Y. $3.50.

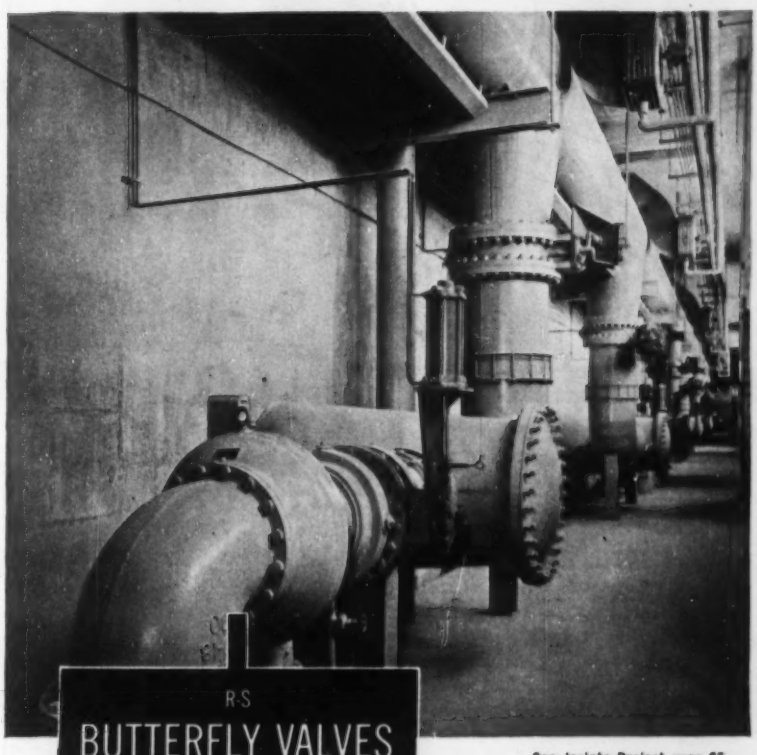
THE FUNDAMENTALS OF ELECTRIC LOG INTERPRETATION—By M. R. J. Wyllie. 126 pp. Academic Press, 125 East 23 St., New York 10, N. Y. $3.60.

HIGHWAY ENGINEERING—By the late Laurence I. Hewes and Clarkson H. Oglesby. 628 pp. John Wiley & Sons, 440 Fourth Ave., New York 16, N. Y. $8.00.

PLASTICS ENGINEERING HANDBOOK—813 pp. Reinhold Publishing Corp., 430 Park Avenue, New York 22, N. Y. $10.00.

BUILDING CHECK LIST — By Ben John Small. 147 pp. Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y. $3.50.

ASTM STANDARDS ON WOOD, WOOD PRESERVATIVES, AND RELATED MATERIALS—355 pp. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $3.75.



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To dig from a river, deep pit or soft area beyond the reach of the boom, the Crescent is hung from a trolley that rides on a track cable. The cable extends from the boom tip to an anchorage. Digging, hauling and discharge proceed as in the casting operation. Following discharge, the scraper is lifted and gravity-returned to the excavation point by merely tightening the track cable.

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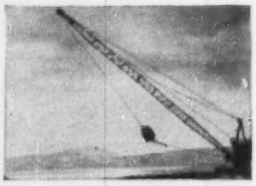
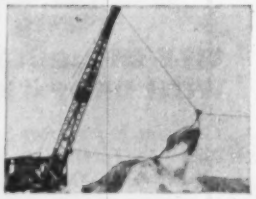


Above: Boom machine has a boom length of 110 feet and uses a 4-cu.yd. Crescent scraper, replacing a 2½-cu. yd. dragline bucket.



Above: A 1½-cu. yd. Sauerman Crescent used with a 1-cu. yd. dragline is lifted clear of the levee and returns to the borrow pit by gravity at 1500 fpm.

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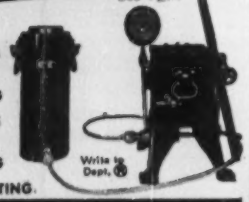

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OBITUARIES

Joshua D'Esposito, 76, engineer for some of Chicago's biggest construction jobs, died last week. D'Esposito was engineer for the Chicago subway project; he was chief engineer for construction of Union Station; and he designed the Chicago Daily News building, one of the city's largest buildings. He was named state engineer for the Public Works Administration in 1933 and later served as resident engineer on a $60-million Chicago Sanitary District project. In 1938, he became federal project engineer for the Chicago subway.

Robert P. Murden, 92, a retired civil engineer, died Nov. 1 in Poughkeepsie, N. Y.

Walter A. Herckenrath, 87, a retired civil engineer for New York City, died Nov. 9. He worked for the city for 45 years in the designing of highways and sewers.

W. S. Jennings, Sr., 54, a civil engineer for the nitrogen division of Allied Chemical & Dye Corp., died Oct. 31 in Richmond, Va.

George W. Meyer, 71, former president of Meyer-Hecht Co., Cincinnati, died early in November. He retired from the general engineering firm in 1952.

Harry G. Hunter, 66, since 1949 Deputy Commissioner of Public Buildings, Washington, D. C., died Nov. 4 in Indiana. One of his best known jobs as a construction engineer was the reconstruction of the White House during President Truman's term of office. Early in his career he served as chief engineer of Atlantic Bridge Co., Greensboro, N. C., and as a consultant to the Reconstruction Finance Corp.

Maj. Gen. A. W. Pence, 56, commanding general of the Army Corps of Engineers Center at Ft. Belvoir, Va., died Nov. 8. General Pence at one time was Ohio River Division Engineer and had held Army Engineer posts in the states of Montana and Mississippi.

Owen L. Ingalls, 91, former civil engineer with the Department of Sewers, Washington, D. C., and city engineer for Manila, died Nov. 4 in Port Washington, N. Y.

C. P. Foster, 79, city building inspector at Salisbury, N. C., and a retired contractor, died Nov. 13.

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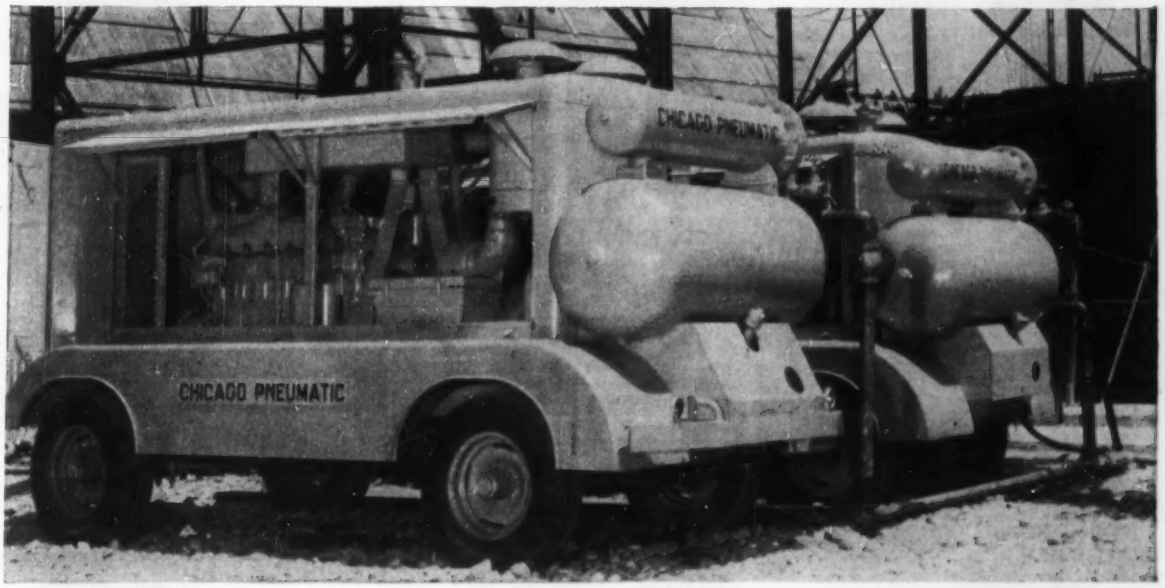

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

▲† **Me., Limestone**—HANGARS—BA 12/10—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., eleven multi-purpose hangars, Loring Air Force Base, ENG-19-016-55-41, $5,000,000-$5,500,000. Plans deposit $25. Charles T. Main, Inc., 80 Federal St., Boston, Mass., and Strobel & Salzman, 70 W. 40 St., New York, N. Y., engrs. Luria Eng. Corp., 500 Fifth Ave., New York, N. Y., consult. engrs. CD 10/6.

▲ **MASSACHUSETTS**—BA 12/14—Massachusetts Turnpike Auth., 80 Boylston St., Boston,
Weston-Wayland and Natick—Contr. 51-090 hy. and bridge constr. $2,000,000. Plans deposit $10. Clarkeson Eng., Co., Inc., 285 Columbus Ave., Boston, engr. Howard, Needles, Tammen & Bergendoff, 80 Boylston St., Boston, general consultant engrs. CD 8/11.

SOON LETS CONTRACT—BUILDINGS

N. H., Manchester—CHURCH—St. Theresa's Parish, Rev. D. P. Desriusseaux, pastor, Manchester, soon lets contract brick church, Calef Rd., $300,000. Albert J. Roy, 120 Front St., Worcester, Mass., archt. CD 11/9.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **City**, High School Comn., City Hall, Newport, R. I. rejected bids Oct. 6, Rogers HIGH SCHOOL, off Ruggles Ave., NEWPORT, R. I. LB **$3,056,700**. Will readvertise. CD 10/11, under LB.

A. F. Peaslee, Inc., 152 Lewis St., Hartford, Conn., CA, **$869,999**, HIGH SCHOOL, west of Park Ave., BLOOMFIELD, CONN. Town, High School Bldg. Comn., Bloomfield, Conn. Bids Nov. 3. CD 1/1/9, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

New York—STATION, SUB-STATIONS, etc.—BA 12/10—New York City Transit Auth., 370 Jay St., Brooklyn, Zone 1, Howard Beach Station and Hamilton and Aqueduct Sub-stations, Route 119-G, Rockaway Route (Contract No. C-105.) CD 8/31/45.

† **N. Y., Fort Hamilton**—BA 12/22—U. S. Eng., 80 Lafayette St., New York, Zone 13, exten. sewerage sys., FY 1955, ENG-30-075-55-171. $250,000-$500,000. Plans deposit $10. CD 10/6.

▲ † **N. Y., Rome**—FACILITIES—BA 12/22—U. S. Eng., 80 Lafayette St., New York, Zone 13, air force facilities, FY 1955, Griffiss Air Force Base, ENG-30-075-55-155, $1,000,000-$1,500,000. Plans deposit $25. CD 9/14/51.

SOON LETS CONTRACT—BUILDINGS

▲ **Md., Baltimore**—OFFICE—Commercial Credit Co., St. Paul and Saratoga Sts., soon lets contract, 11 to 16 story office, 309 to 313 N. Charles St. over St. Paul Garage, St. Paul and Saratoga Sts. $10,000,000-$15,000,000. Harrison & Abramovitz, 630 Fifth Ave., New York, N. Y., archts. CD 11/9.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,
C. P. Ward, Inc., 700 Hollenbeck St., Rochester 21, N. Y. LB **$399,625**, est. $486,000, 0.4 mi. Rochester City: Inner Loop (Exchange St.-Main St. West), FAC 54-15, Monroe Co.;
Gardner Constr. Corp., 113 Maiden Lane, New York, N. Y. LB **$151,547**, est. $212,000, New York State Thruway-Catskill Sect.-Subd. 1 Malden Gas Station-Restaurant Site (Type A). C. T. 54-3, Ulster Co.; LB **$179,546**, est. $229,000, New York State Thruway-Catskill Sect.-Sub. 2, Ruby Gas Station-Restaurant Site (Type A). C. T. 54-2, Ulster Co.;
Slattery Rock Corp., 46-36 54 Rd., Maspeth, N. Y. LB, **$2,248,000**, est. $2,620,000, 7.20 Exp. (1.28 Acc.) mi., Major Deegan Expressway (Cont. No. 9). FAMDE 54-6, Bronx Co.;
Circle Constr. Corp., 1 Virginia Rd. N., White Plains, N. Y., LB **$85,229**, est. $102,000, 3.05 mi. Saw Mill River Parkway (Mt. Kisco-Katonah, Pt. 1), SMRP. 54-1. Westchester Co.; Bids Nov. 18. CD 10/26, 11/9.
Warshaw Contg. Corp., 101 Park Ave., New York 17, N. Y. CA **$419,419**. Contr. No. X-2-154, general constr. laboratory bldg. in New York Botanical Garden, south of Mosholu Parkway east of Southern Blvd., NEW YORK, N. Y. Comr. Parks, Dpt. Parks, Arsenal Bldg., Central Park, 64 St. and 5th Ave., New York 21, N. Y. Bids Sept. 20. CD 9/2.
▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., 506 N. Office Bldg., Harrisburg,
Keelor Constr. Co., Pennsburg, Pa., LB **$2,616,121**, constr. 5.3 mi. link of West Chester Pike (Rte. 3), Delaware Co. Bids Nov. 19. CD 10/27.
▲ **McCloskey & Co.**, 1620 W. Thompson St., Phila., Pa. LB $2,989,273. filter bldg., Torresdale Plant, Bid 2262, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa., Bids Nov. 18. CD 10/21.
▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
Ehrhardt & May, Inc., 5717 Harford Rd., Baltimore 14, Md. CA **$2,310,195**. surf. 11.038 mi. roads, Glen Burnie By-Pass, Contr. AA 473-2-520, Anne Arundel Co.;
Harry T. Campbell Sons Corp., Towson, Md. CA $645,988. surf. 2.17 mi. State Rte. 542, near Baltimore, Contr. B 619-420, Baltimore Co. CD 10/11, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

K & M Builders, Inc., 703 Morris Park Ave., New York, N. Y. Owner Builds. **$322,000**. 22 HOUSES, Connell Pl. and Bruckner Blvd., NEW YORK, N. Y. E. R. Crino, 4740 White Plains Rd., New York 66, N. Y., archt.
▲ **E. I. du Pont de Nemours & Co., Inc.**, du Pont Bldg., Wilmington, Del. Own Forces. addnl. facilities for PLANT to manufacture polyisocyanates, chemicals used in mfg. adhesives, plastics and new type of rubber, DEEPWATER POINT, N. J.
▲ **Plymouth Homes**, Att. M. Wolf, Rt. 70 and Railroad, Merchantville, N. J., Separate Contracts, $2,000,000. RESIDENTIAL DEVELOPMENT, various locations, ERLTON, N. J.
▲ **Anthony J. Volpi**, 22 Shoemaker Lane, R. D. No. 1, Bridgeport, Pa., Separate Contracts. $1,500,000 RESIDENTIAL DEVELOPMENT, Valley Forge Rd., BRIDGEPORT, PA.
▲ **A. Stanley Ezekiel**, 601 Morgan Ave., Drexel Hill, Pa. Separate Contracts. $3,500,000. RESIDENTIAL DEVELOPMENT, Newtown Square Rds., NEWTOWN SQUARE, PA.
▲ **James N. Clarkin**, Castor Ave. and Wingohocking St., Phila., Pa., CA $1,600,000. Bishop Neumann HIGH SCHOOL, PHILA., PA. Roman Catholic Archdiocese of Phila., 310 N. 19 St., Phila., Pa. Bids Nov. 3. CD 11/5.
▲ **John McShain, Inc.**, 17th and Spring Garden Sts., Phila., Pa., CA $2,500,000. APARTMENT HOUSE, STORES, PROFESSIONAL OFFICES, GARAGE, Mt. Pleasant Ave. and Ardleigh St., PHILA., PA. Sedgewick Farms, Inc., c/o Edward L. Holland, archt., 540 N. 17 St., Phila., Pa
▲ **S. Yellin & Son, Inc.**, 222 N. 11 St., Phila., Pa., CA $2,500,000. DEPARTMENT STORE, 23 St. and Oregon Ave., PHILA., PA. Snellenburgh, 11 and Market Sts., Phila., Pa. Wallace & Warner, Bryn Mawr, Pa., archts.-engrs.
▲ **S. H. Everts Co., Inc.**, Danville Road, Bloomsburg, Pa., LB, $4,770,000, general construction for central group;
George H. Roller Co., Inc., 416 Washington Blvd., Williamsport, Pa., LB **$420,542**, general construction for school building;
Ritter Brothers, 1511 N. N. Cameron St., Harrisburg, Pa., LB, **$290,496**, general construction for laundry, warehouse and cannery;
Herre Brothers, Inc., Sixth and Montrose Sts., Harrisburg, Pa., LB, **$743,600**; heating construction for central group; LB **$86,500** plumbing construction for laundry, warehouse and cannery;
Moyer Brothers, 2605 Beale Ave., Altoona, Pa., LB, **$89,882** heating construction for warehouse and cannery;
V. R. Yoder Plumbing & Heating Co., 166 Spring St., Meadville, Pa., LB, **$132,166**, boiler plant;
Williard, Inc., 2901 N. Broad St. Phila., Pa., LB, **$88,600** steam distributing; LB **$824,900** for plumbing construction for central group;
Keystone Eng. Corp., 135 N. Fifth St., Reading, Pa., LB **$662,500**. electrical construction for central group of Selinsgrove STATE SCHOOL expansions, SELINSGROVE, PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Bids Nov. 17. CD 11/12.
▲ **George Hyman Constr. Co.**, 1010 Vermont Ave. N.W., Wash., D. C. CA Est. **$2,000,000**. 3 story suburban branch DEPARTMENT STORE, University Lane and New Hampshire Ave., Langley Park, UPPER MARLBORO, MD. Lansburg Department Store, 7 and 8 and E Sts. N.W., Wash., D. C. Awarded Nov. 19.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.
CD dates shown are of Construction Daily issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

SOUTH

BUILDINGS

LOW BIDS AND CONTRACTS

Armstrong Constr. Co., Inc., 151 Shelby St., Kingsport, Tenn. CA $590,000. Graham High SCHOOL, near Bluefield, TAZEWELL, VA. Tazewell Co. School Bd., J. L. Walthall, supt., Tazewell, Va. CD 11/5 under LB.
▲† **Williams Constr. Co.**, P. O. Box 1039, Columbus, Ga., CA, $3,540,347, Kelly Hill BARRACKS, ENG-09-133-55-9, FORT BENNING, GA. U. S. Eng., 200 E. St. Julian St., Savannah, Ga. Bids Oct. 19. CD 11/10, under LB.
▲ **Quaker Valley Constr. Co.**, Pittsburg, Kan. CA $1,750,000. CHEMICAL PLANT expansion on Ohio River southwest of HENDERSON, KY. Spencer Chemical Co., Henderson, Ky. CD 5/10.
Struck Constr. Co., 147 N. Clay St., Louisville, Ky. CA Est. $350,000. BREWERY imprvs., concrete floor, repairs to fdn., installing new equip., LOUISVILLE, KY. Falls City Brewery, 3050 W. Broadway, Louisville, Ky. Bids Nov. 16.

MIDDLE WEST

BIDS ASKED—BUILDINGS

Mich., Howell—SCHOOL—BA 12/8—Bd. Educ., School Dist. 1 Fractional, Edward A. Fritch, secy., Northeast Elementary School, West Elementary School, and North Elementary School, Louis C. Kingscott & Assoc., 511 Monroe St., Kalamazoo, archts. CD 8/6.
▲ **Mich., Saginaw**—SCHOOL—BA 12/14—City, Bd. Educ., 544 Millard St., Intermediate School, Norman and N. 20 Sts., $1,250,000, Frederick E. Wigen, 597 Weichman Bldg., archt. CD 1/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Penker Constr. Co., Summer St., Cincinnati, O. CA $861,806, est. $785,952. admin. bldg. for Mill Creek Sewage Works, Contr. No. 3, CINCINNATI, O. City, City Hall, Cincinnati, O. Bids Nov. 9, awarded Nov. 16. CD 11/17, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **A. Siegler & Sons**, 5117 Lee Rd., Maple Heights, O. CA Approx. $4,000,000. design and construct. 4 story STORE, Southgate Shopping Center, Libby and Warrensville Center Rds., MAPLE HEIGHTS, O. Sears Roebuck & Co., 8501 Carnegie Ave., Cleveland 6, O. CD 8/13.
▲ **Booth & Flinn Co.**, 1942 Forbes St., Pittsburgh, Pa., CA Est. $12,000,000, general contract 120,000 kw steam electric GENERATING PLANT, PHILO, O. Ohio Power Co., 301 Cleveland Ave., Canton, O.

(Continued on page 64)

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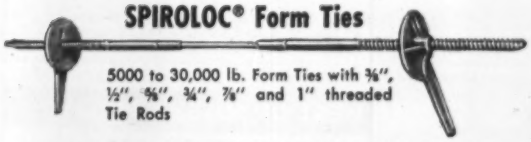

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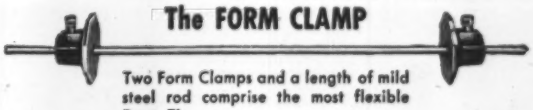

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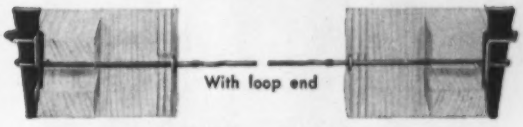

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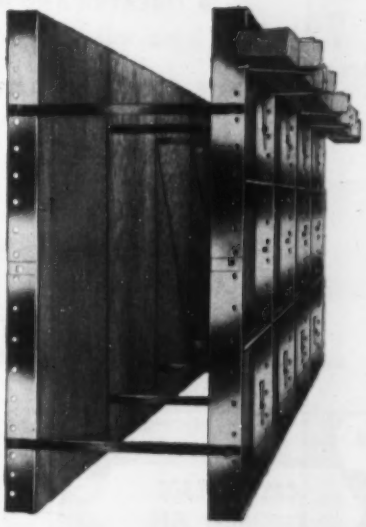

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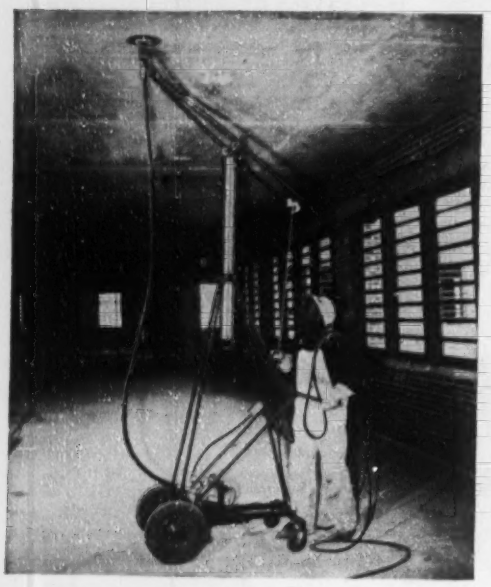

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St. Louis—Minneapolis—Denver—New Orleans

(Continued from page 62)

Norbury Homes, Inc., 1323 Main St., Anderson, Ind., Owner Builds, $300,000 or more, National HOMES in Indiana Meadows, ANDERSON, IND.

Huber Hunt & Nichols, Box 128, Indianapolis, Ind., LB, $700,000, LAW SCHOOL, BLOOMINGTON, IND. University of Indiana, Bloomington, Ind. Bids Nov. 10. CD 11/3.

▲ **Rutledge & Wolfpeck Co.**, Brownsburg, Ind. Owner Builds, $1,000,000. 100 new HOMES in new subdivision, BRIDGEPORT, IND.

Lawson Jaffe Co., 1137 Harvard St., Dayton, O., Owner Builds. $300,000 or more. 45 unit MOTEL, Lafayette Rd., INDIANAPOLIS, IND.

Holtz Const. Co., Box 754, Kokomo, Ind., Owner Builds, $300,000 or more, group of new HOMES, KOKOMO, IND.

▲ **Long Constr. Co.**, Rialto Bldg., Kansas City, Mo. CA Est. $7,000,000. 3 story, 450,000 sq. ft. OFFICE, Southfield and Rotunda Sts., DEARBORN, MICH. Ford Motor Co., 3000 Schaefer St., Dearborn, Mich. CD 8/13.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

IOWA—State Hy. Comn., Ames,
Weldon Bros., Iowa Falls, Ia., LB, $118,431 bridges and culverts FM-415, Hamilton Co.;
Zitterell-Mills Co., Webster City, Ia., LB, $113,858 bridges, culverts SN-2458, Hamilton Co. Bids Nov. 16. CD 11/5.

IOWA—State Hy. Comn., Ames,
Midwest Pre-Cote Co., 7600 E. 17 St., Kansas City, Mo., LB, $78,447, paving 1.422 mi. F-6 (4) Special; LB $109,048, paving 2.754 mi. F-123 (5), Special; LB $430,576, paving 10.896 mi. F-931 (1), all foregoing in Ringgold Co.;
Kaser Constr. Co., 3111 Ingersoll St., Des Moines, Ia., LB, $291,644, stab. base and bit. 6.114 mi. Special F-468 (1), Cass Co.;
Mark Eischeid Constr. Co., New Hampton, Ia., LB, $113,588 grading 4.812 mi. S-2400 (1), Clayton Co. Bids Nov. 16. CD 11/5.

▲† **Cook Constr. Co.**, Box 1151, Jackson, Miss. CA $2,324,850. Lovewell Dam, Bostwick Division, Missouri River Basin Proj., near Mankato, Spec. DC 4253, KANSAS. Bureau Reclamation, Dpt. Interior, Superior, Neb. CD 10/26, under LB.

Spaw-Glass, Inc., 2518 Times St., Houston, Tex., LB, $451,000, for 3,500 capacity stadium and city hall, TEXAS CITY, TEX. Town, Texas City, Tex. Bids Nov. 10. CD 10/20.

▲† **Metropolitan Paving Co.**, N. W. 36 and Classen Sts., Oklahoma City, Okla., LB $2,071,740, est. $1,125,000-$3,750,000. addnl. airfield paving and airfield lighting (concrete type paving) for Walker Air Force Base, ROSWELL, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Nov. 17. CD 10/26.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Kraus-Anderson, Inc.**, 501 Eight St. S., Minneapolis, Minn. CA $2,539,000. 6 story OFFICE, Seventh St. and Second Ave. S., MINNEAPOLIS, MINN. Lutheran Brotherhood, Pillsbury Bldg., Minneapolis, Minn. Bids Oct. 26. CD 10/6.

▲ **Station Constr. Co.**, 2518 Drexel St., Houston, Tex., CA, $1,500,000, COMPRESSOR STATION, EDNA, TEX. Trunkline Gas Co., 5650 Kirby St., Houston, Tex. CD 11/22.

▲ **W. P. Luse**, Republic Bank Bldg., Dallas, Tex., Force Account, $310,000, Sect. 7, 31 DWELLINGS; $324,000, Sect. 8, 24 DWELLINGS; $393,750, Sect. 11, 40 DWELLINGS, MESQUITE, TEX. Grand total $1,027,750. CD 9/1.

Beck Constr. Co., 2304 Walnut St., Odessa, Tex., Owner Builds, $328,000. 28 DWELLINGS, ODESSA, TEX. CD 11/8.

▲ **H. B. Zachry Co., Inc., Constr. Div.**, Box 2570, San Antonio, Tex., CA, $4,630,000 general construction PLANT proper;
Babcock & Wilcox Co., 161 E. 42 St., New York 17, N. Y. CA, $1,750,000 steam boiler;
Westinghouse Electric Corp., 3001 Walnut St., Phila., Pa., CA, $2,870,000, turbo-generator power transformers and 2,400 volt motors;
Handled by sub-contracts under Superv. of Owners Engineers, $1,250,000. constr. and providing various smaller contracts connected with the project A North Side Plant at Perrin-Beitel Roads, SAN ANTONIO, TEX. City Public Service Bd., 201 N. St. Mary's St., San Antonio, Tex. Grand total $10,500,000. CD 6/4/53, under Unclassified.

FAR WEST

BIDS ASKED—BUILDINGS

Calif., Palmdale—SCHOOL—BA 12/23—Palmdale School Dist., Palmdale, 30,000 sq. ft., reinforced brick School Plant No. 3, $600,000. Jerome C. DeHetre, 414 N. Burris Ave., Compton, archt. CD 5/25.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

North H. Plunkett & Co., 21117 Norwalk Blvd., Artesia, Calif., LB, $523,077, est. $500,000 Proj. 25, Peck Road Storm Drains, Monrovia, LOS ANGELES, CALIF. Los Angeles Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids Nov. 12. CD 10/22.

† **Matich Brothers**, Colton Ave. and Willow St., Colton, Calif., CA, **$455,276**, est. $500,000 airfield grading, paving, ENG-04-353-55-43, MARCH AIR FORCE BASE, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Nov. 10. CD 10/21.

BUILDINGS

LOW BIDS AND CONTRACTS

Wilfred H. May, 700 Harbor Blvd., Belmont, Calif., CA, **$387,743**, incl. base bid and alternates Springer Elementary SCHOOL, Mountain View, LOS ALTOS, CALIF. Los Altos Elementary School Dist., Box 188 Los Altos, Calif. CD 9/16, under LB.

▲ **L. E. Dixon Co.**, 409 S. California St., San Gabriel, Calif., LB, **$4,238,193**, Cement PLANT near MOJAVE, CALIF. California Portland Cement Co., 612 S. Flower St., Los Angeles, Calif. Bids Nov. 16. CD 10/28.

▲ **Beverly Development Co.**, 8549 Wilshire Blvd., Los Angeles, Calif. Owner Builds, **$1,698,200**, 196 frame, stucco DWELLINGS, Nolandale and Janetdale Sts., etc., PUENTE, CALIF. Martin Stern, 450 N. Beverly Dr., Beverly Hills, Calif., archts.

Ted. A. Rehwald Constr. Co., 209 Professional Bldg., San Bernardino, Calif. CA, **$398,428**, 235x252 ft., fruit and feature EXHIBIT BLDG., SAN BERNARDINO, CALIF. National Orange Show, Mill and "E" Sts., San Bernardino, Calif. Bids Oct. 28, awarded Nov. 9. CD 10/6.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

Man., Winnipeg—COMMUNICATION SYSTEM—BA 12/9—Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont., underground power and communication system. $400,000. Plans deposit $100.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Canadian Bechtel Ltd.**, 425 Howe St., Vancouver, B. C., CA Est. **$2,000,000**, installing equip. for catalytic polymerization unit and Naptha Fractionator on Burrard Inlet, VANCOUVER, B. C. Imperial Oil Ltd., 56 Church St., Toronto, Ont. CD 10/29.

Tatti Construction Co. Ltd., 73 King St. W., Hamilton, Ont. Owner Builds. **$500,000**, 72-unit APARTMENT, four buildings, each 3 story, bsmnt., 108 New St., BURLINGTON, ONT.

Sterling Constr. Co., Ltd., 2494 Sandwich St. E., Windsor, Ont., CA, **$884,179**, 100-single family DWELLINGS, Canadian Army Base, CAMP BORDEN, ONT. Central Mortgage & Housing Corp., 40 Eglinton Ave. E., Toronto, Ont. Bids Nov. 10, awarded Nov. 15.

W. B. Sullivan Constr. Ltd., Warden Ave., Toronto, Ont., LB, **$533,971**, Municipal OFFICE, Yonge and Burnett Ave., TORONTO, ONT. North York Twp., 5145 Yonge St., Toronto, Ont. Bids Nov. 15. CD 11/3.

Dell Constr. Co. Ltd., 2461 Bloor St. West, Toronto, Ont., CA, **$750,000**. Earl Haig COLLEGIATE INSTITUTE addns., alterations, 100 Princess Ave., WILLOWDALE, ONT. North York Bd. Educ., 7 Kenneth St., Willowdale, Ont. Bids Nov. 1, awarded Nov. 15. CD 11/16, under LB.

▲ **Brogel Constr. Ltd.**, Aldred Bldg., Montreal, Que., Owner Builds, **$8,000,000**, 850 to 1,000 ranch-type BUNGALOWS, BOUCHERVILLE, QUE. D. G. Woods, 4115 Sherwood St. W., Montreal, Que., archt.

Wilfred Legare, Inc., 395 St. Foye Rd., Quebec City, Que., CA, **$800,000**, concrete, steel, brick HOME for Children addn., St. Viateur St., GIFFARD, QUE. Charles DeFouchaud, c/o Rene Blanchet, archt., 53 d'Auteuil St., Quebec City, Que., archt.

▲ **E. G. M. Cape & Co.**, 620 Cathcart St., Montreal, Que., CA, **$1,600,000**, BOTTLING PLANT exten., MONTREAL, QUE. Molson's Brewery Ltd., 1670 Notre Dame St. E., Montreal, Que. McDougall, Smith & Fleming, 1235 McGill College Ave., Montreal, Que., archts.

▲ **E. G. M. Cape & Co. Ltd.**, 620 Cathcart St., Montreal, Que., CA, **$1,000,000**, BREWERY addn., MONTREAL, QUE. Molson Brewery Ltd., 1670 Notre Dame St., Montreal, Que. McDougall & Assocs., 1235 McGill College Ave., Montreal, Que., archts.

Proposed Projects

WATER SUPPLY

▲ **Mich., Pleasant Ridge**—South Oakland County Water Auth., 23646 Woodward St., water sys. Incl. 101,245 ft. water mains, 10 m.g. reservoir to serve Berkley, Clawson, Pleasant Ridge, Huntington Woods, Southfield, Birmingham, **$6,000,000**. Ayres, Lewis, Norris & Day, 500 Wolverine Bldg., Ann Arbor, consult. engrs.; George G. Schmid, c/o owner, ch. engr. CD 7/2/53.

▲ **Minn., St. Paul**—City, J. R. Okoneski, clk., L. N. Thompson, supt. Water Dpt., City Hall and Court House Bldg., outside-city supply sys., controls, pumping station, conduits, etc., **$293,600**; water treatment plant (Rice Lake) new clarifiers, laboratory, enlarging station, **$1,134,800**; various projects in distr. sys. mainly 20, 24 and 30 in. mains, **$3,085,000**; imprvs. at pumping station, McCarron's Lake, **$685,000**; auto controls at sub-stations, $8,600. CD 11/5.

▲ **Minn., St. Paul**—City, J. B. Okoneski, clk., L. N. Thompson, genl. mgr. Water Dpt., City Hall and Court House Bldg., WW imprvs., outside city supply

How to restore and preserve costly masonry structures with **D-J Mortar, Thorite, Thoroseal and Thoroclear** *even though masonry looks beyond repair!*

Second Episcopal Church of Boston, Brookline, Mass.

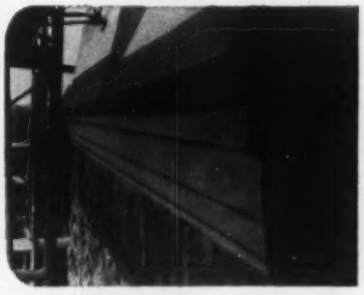
Only the bare skeleton of cornice remains after years of disintegration.

To repair, all loose material was cut out and complete surface was wire brushed in preparation of THORITE treatment.

Above photos show how vines grew over stone structure and hid most of damaged masonry.

Vines were cut away from building and disintegrated joints grouted with D-J Grouting Mortar.

Stone trim was then given two coats of THOROSEAL. Entire surface received a coat of transparent THOROCLEAR.



AFTER Brush and trowel coat of THORITE, nonshrink patching mortar was used to restore this masonry to its original lines. A two-coat application of THOROSEAL was applied to beautify and protect the surface. Nonsagging THORITE can be used to model any masonry structure back to its original lines.

ALL MASONRY NEEDS PROTECTION

Stretcher stone work treated with D-J Grouting Mortar and entire stone surface THOROCLEARED.

Get our pictorially-described literature,

"HOW TO DO IT"

Standard Dry Wall Products, Inc.

NEW EAGLE, PENNSYLVANIA, U.S.A.

sys. more conduits, etc., $2,747,700; filters, addnl. clarifiers (Rice St.), $1,360,000; imprvs. at McCarron pumping station probably new sub-station. $145,000.

SEWERS, WASTE DISPOSAL

▲ **Calif., Fairfield**—Fairfield-Suisun Sewer Dist., Fairfield, voted $1,060,377 bonds, sewage disposal plant, sewer lines, etc. CD 8/25.

STREETS AND ROADS

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Somerville—relocating 22 mi. Rte. 28 from Boston to New Hampshire line from Somerville, Medford Square, Gravelly Creek Hy., Stoneham, Reading, Wilmington and North Reading, Andover to Methuen to rejoin present route 28 to New Hampshire line, Est. $25,000,000.

▲ **Mo., Springfield**—City, City Hall, trafficway imprvs. $1,045,000.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,
St. Lawrence Co.—4.25 mi. highway imprvs. near Massena, $4,500,000.
3.9 mi. arterial route at Ogdensburg, $1,830,000.

▲ **N. Y., Brooklyn**—President Brooklyn Boro, Boro Hall, Zone 1, revision of plans, original Contract 6, between Nassau and Concord Sts., Brooklyn-Queens Connecting Highway. $1,435,000. Andrews, Clark & Buckley, 305 E. 63 St., New York, engrs.

▲ **Ont., Toronto**—Municipality of Metropolitan Toronto, City Hall, council approved start on Lakeshore Expressway, three sections, for 1955, partly elevated, six lanes from Humber River to Dowling Ave., Humber River to Queen and Roncesvalles Sts. and Sherbourne to Woodbine and Coxwell Aves., $36,248,400. CD 7/13/53.

EARTHWORK, WATERWAYS

▲ **Ont., Toronto**—Don Valley Conservation Auth., City Hall, erecting 9 dams on Don River. $1,500,000.

AIRPORTS

▲† **Okla., Clinton**—AIR BASE—Dist. P. Wks. Office, Eighth Naval Dist., Naval Station, New Orleans, La., airfield pavements, aprons, firing-in butt, NOY No. 77547, Spec. 37224, over $1,000,000; jet fuel and MoGas storage A.G. NOY 77549, Spec. 37226, under $100,000; refuel hydrants, NOY 77550, Spec. 37227, $500,000-$1,000,000; new ordnance facilities, NOY 77551; Spec. 38060, $100,000-$500,000; runway and taxiway lighting, NOY 77552, Spec. 38061, $500,000-$1,000,000; communications bldg. and R & T Bldgs., NOY 77553, Spec. 38062, $100,000-$500,000; fire and crash station and squadron operations bldgs., NOY 77554, Spec. 38063, $100,000-$500,000; airmen's dormitories and mess, NOY 77555, Spec. 38064, over $1,000,000; BOQ, officers' mess and cold storage bldg., NOY 77556, Spec. 38065, $500,000-$1,000,000; roads and streets, NOY 77561, Spec. 38070, $100,000-$500,000; underground utilities, NOY 77562, Spec. 38071, $100,000-$500,000; electrical distr. sys., NOY 77563, Spec. 38072, under $100,000; hospital and dental clinic addn. NOY 77871, Spec. 38360, $100,000-$500,000. at Clinton-Sherman Air Force Base for the Air Force. CD 3/3/53.

PUBLIC BUILDINGS

▲ **Calif., Montebello**—SCHOOL—Montebello School District, voted $4,000,000 bonds, school imprvs. CD 10/14.

▲ **Conn., Norwalk**—SCHOOL—City, Bd. Educ., c/o Supt. Schools, plans by Gilroy & Gaydosh, 64 Wall St., Junior High School, incl. athletic field, West Norwalk Ave., $1,267,600. CD 1/29.

▲ **Mo., St. Louis**—SCHOOL—Bd. Educ., V. Harry Rhodes, comr. School Bldgs., 911 Locust St., Zone 1, elementary school, 11 and Herbert Sts. to replace present Ames School. $1,164,866. CD 5/7/51.

▲ **Mo., St. Louis**—SCHOOL—Bd. Educ., V. Harry Rhodes, comr. School Bldgs., 911 Locust St., Zone 1, elementary school, 20 and Carr Sts. to serve area of M-6 public housing. $1,250,000. CD 6/11/51.

▲ **Neb., Beatrice**—SCHOOL—Bd. Educ., $1,000,000 bond election Dec. 14, schools.

▲ **N. Y., Brooklyn**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 45-12 Crescent St., Long Island City, Zone 1, Proj. E-38, Junior High School 211, vicinity Avenue K and E. 98 St. $3,450,000. CD 9/8/48.

▲ **N. Y., Brooklyn**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 45-12 Crescent St., Long Island City, Proj. E-630, Junior High School 33, vicinity of Park and Marcy Aves. $3,750,000. CD 9/8/48.

▲ **N. Y., Brooklyn**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 45-12 Crescent St., Long Island City, Proj. E-99, Junior High School 136 addn., 4 Ave. and 40 St. $1,250,000. CD 9/8/48.

▲ **N. Y., Brooklyn**—HIGH SCHOOL—Bd. Educ., Bureau Constr. 45-12 Crescent St., Long Island City, Zone 1, Proj. E-335, Eastern District High School addn., Marcy Ave. and Keap St. $2,218,000. CD 9/8/48.

▲ **N. Y., Lynbrook**—HIGH SCHOOL—Bd. Educ., Union Ave. high school. $2,480,000.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 45-12 Crescent St., Long Island City, Zone 1, Proj. E-126, P. S. 19, E. 11 St. and First Ave. $3,000,000. CD 9/8/48.

▲ **N. Y., New York**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 45-12 Crescent St., Long Island City, Zone 1, Proj. E-323, Food Trades High School, vincinity of W. 12 St. and 7 Ave. $7,900,000. CD 8/13/45.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 45-12 Crescent St., Long Island City, Zone 1, Proj. E 168, P.S. 82, vicinity of First Ave. and 70 St. $1,900,000. Alfred Hopkins & Assoc., 415 Lexington Ave., Zone 17, consult. engrs. CD 9/8/48.

▲ **O., Cincinnati**—HOSPITAL—State, Mental Hygiene & Correction, S. Front St., hospital expansion, $10,000,000; enlarging Children's unit, $1,000,000, both at Longview Hospital. CD 12/17/52.

▲ **R. I., Providence**—COLLEGE OF EDUCATION—State of Rhode Island & Providence Plants, F. A. Adams, purch. agt., State House, plans by Howe, Prout & Ekman, 17 Custom House St., College of Education, Mt. Pleasant Ave. $3,500,000.

▲ **Wash., Puyallup**—SCHOOL—School District No. 2, Puyallup, voted bonds, Junior High School. $1,500,000. R. B. Price, 2907 A St., Tacoma, archt. CD 9/24.

▲ **B. C., Vancouver**—LIBRARY—City, H. M. Boyce, chn., plans by Semmens & Simpson, 1242 West Pender St., library, Robson and Barrad Sts. $2,000,000.

▲ **Ont., Fort William**—HOSPITAL—Dpt. P. Wks., Parliament Bldgs., Toronto, Mental Hospital addn., N. Algoma St. $2,000,000.

▲ **Ont., Toronto**—CITY HALL—City, L. Saunders, mayor, city hall west of present city hall, $15,000,000. CD 30/45.

▲ **Sask., Regina**—SCHOOL—City, City Hall, ratepayers approved bylaw Nov. 3, composite high school in River Heights area $1,250,000.

▲ **Yukon Territory, Whitehorse**—HOSPITAL—Dpt. Northern Affairs, Langevin Block, Ottawa, Ont., hospital $3,000,000.

COMMERCIAL BUILDINGS

▲ **Calif., Los Angeles**—DWELLINGS—Academy Building Co., 9615 Van Nuys Blvd., Van Nuys, 350 frame, stucco dwellings, Natick, Cedros and Nordhoff Aves. $3,500,000.

▲ **Calif., Los Angeles**—OFFICE, etc.—Sam Genis, c/o Pereira & Luckman, archts., 9200 Sunset Blvd., 12 story office and theatre, Wilshire Blvd. and Fairfax Ave. $5,000,000.

▲ **Colo., Denver**—SCHOOL, etc.—Temple Emanuel, East 16 Ave. and Pearl St., plans by Percival Goodman, 19 E. 48 St., New York 17, N. Y., school and temple, in Hilltop Area. $1,000,000. Robert M. Morris, 330 W. Asbury St., consult. engr. CD 2/1.

▲ **Colo., Denver**—HOTEL, etc.—Webb & Knapp, c/o Arthur Rydstrom, Mile Center Bldg., Denver, plans by I. M. Pei, archt.-engr., Mile Center Bldg., 20 story hotel and 7 story department store, also shops across the street and huge underground parking area. $15,000,000.

▲ **Conn., New Haven**—ENGINEERING LABORATORY—Yale University Bd. Trustees, electrical engineering laboratory, 4 Hillhouse Ave. $1,000,000. CD 5/12.

▲ **Kan., Mission**—MOTEL, etc.—J. C. Nichols Co., 310 Ward Parkway, Kansas City, Mo., plans by Edw. Tanner & Assoc., 310 Ward Parkway, Kansas City, Mo., 245-unit motel, restaurant and service station, Johnson Dr. and Granada St. $1,500,000.

▲ **Mich., Grand Rapids**—SHOPPING CENTER, etc.—Harold T. Fletcher, 824 Michigan Trust Bldg., shopping center and apartment, Romona Park, $2,500,000.

▲ **Mich., Pontiac**—HOUSING—Owner, c/o Samuel W. Leib, 3000 Cadillac Tower, Detroit, 200 acre housing subdivision. $3,000,000.

▲ **Mo., Kansas City**—APARTMENT—Lewis Kitchen, R. A. Long Bldg., Kansas City, Mo., plans by Kivett & Meyers, 1016 Baltimore St., Kansas City, Mo., two 10 story apartment, 103 units, air-conditioned, on 7 acre site, 53 and State Line, $4,500,000.

▲ **Mo., Kansas City**—HOMES—St. Andrew's Investment Co., John A. Kroh, 8060 Lee Blvd., Leawood, Ward Parkway Estates, homes, shopping and office bldgs., parking, 115 acres, former St. Andrew's Golf Club site, $10,000,000. Herb E. Duncan, 208 Nichols Rd., Kansas City, Mo., archt. for shops and office area.

▲ **Mo., St. Louis County**—HOMES—Frank E. Zykan, Inc., 8400 Leith Ave., Overland, Zone 14, 300 frame, brick cement sidings homes. $1,000,000.

▲ **Mo., St. Louis**—HOME—The Good Samaritan Home for the Aged, Bd. Directors, H. H. Gieselman, pres., 4500 Washington blvd., Zone 8, home for aged, on 5 acre site at 5200 S. Broadway, $1,000,000.

▲ **Ore., Portland**—APARTMENT—Harry Mittleman, 710 S.W. Madison St., plans by Dougan & Heims, Royal Bldg., and Folger Johnson, 10 N.W. 20th Ave., apart-

▲ **Tenn., Nashville**—STORE—The Harvey Co., Sixth and Church Sts., 6 story, brick, stone, steel 40,000 sq. ft. store addn. $1,500,000.

▲ **Tex., Dallas**—HOME OFFICE—Dallas Federal Savings & Loan Assn., Magnolia Bldg., plans by George L. Dahl, arch.-consult. engr., 2101 N. St. Paul St., 15 to 20 story masonry, steel home office, Elm and Akard Sts. $3,500,000.

▲ **Tex., San Antonio**—BANK and OFFICE—National Bank of Commerce, Soledad and Commerce Sts., plans by Kenneth Franzheim, 802 Lovett St., Houston, bank and office, $4,500,000. Atlee B. & Robert M. Ayres, 342 W. Woodlawn St., assoc. archts. CD 10/13.

▲ **Tex., San Antonio**—HOSPITAL—Santa Rosa Hospital, W. Houston and Santa Rosa Sts., 150-bed childrens hospital. $1,500,000.

▲ **Utah, Salt Lake City**—OFFICE—Zion's Security Corp., L. Pierce Brady, mgr., U.P. Annex Bldg., plans by Ashton, Evans & Brazier, 24 S. West Temple St. $1,000,000.

▲ **Ont., Mimico**—APARTMENT—Owner, c/o Gordon Bazeley, 602 Bayview Ave., Toronto, apartment, Lake Shore Rd., $1,000,000.

▲ **Ont., Toronto**—SHOPPING CENTER—Grand Union Co., 76 Biggar Ave., Hamilton, shopping center, Ellesmere and Victoria Park Aves. Over $2,000,000.

▲ **Ont., Toronto**—STORES, etc.—Ben Seaton, 45 Wembley Rd., plans by E. I. Richmond, 455 Spadina Ave., 14 story store, office and apartment, 36 Carlton St., $1,500,000; 11 story apartment, 494 Avenue Rd. $1,000,000.

▲ **Que., Montreal**—OFFICE—Owner, c/o Ben-Ami Shulman, archt., 5174 Cote des Neiges Rd., 15 story, 75x120 ft., structural steel, concrete, brick, office. $3,500,000.

INDUSTRIAL BUILDINGS

▲ **Kan., Kansas City**—PLANT—Sealright Co., Fairfax Rd., Kansas City, Kan., plant expansion, Donovan Rd., Fairfax, Ind. Dist., near here. $1,000,000.

▲ **Minn., Minneapolis**—PARTS DEPOT—Ford Motor Co., 966 S. Mississippi River Blvd., St. Paul, parts depot, 1 story, 60x240 ft. office, 240x560 ft. warehouse, St. Anthony Blvd. and Marshall St. N.E., $1,000,000.

▲ **Mo., St. Louis**—PLANT—Brown Shoe Co., 8300 Maryland Ave., Clayton, Zone 24, rein.-con. plant on site at Bingham and Gustine Aves. $1,000,000.

▲ **N. H., Berlin**—PLANT—Brown Co., Berlin, sulphate bleachery and furfural producing plant, $10,000,000. CD 5/26/44.

▲ **O., Brook Park**—PLANT—Price Bros. Co., 1932 E. Monument St., Dayton, concrete mfg. plant, Sheldon Rd. $2,000,000.

▲ **O., Cleveland**—BREWERY—P. O. C. Brewing Co., 6605 Clark St., brewery expansion and modernization. $5,000,000.

▲ **Tex., Dallas**—PARKING GARAGE—Trammell Crow, 425 S. Field St., 10 story auto parking garage. $1,000,000.

▲ **Utah, Provo**—AMMONIA PLANT—Columbia Geneva Steel Div., U. S. Steel Corp., Russ Bldg., San Francisco, Calif., ammonia plant. $18,000,000-$20,000,000.

▲ **Ont., Toronto**—GARAGE—Toronto Transit Comn., 35 Yonge St., bus garage, 10-acre site, Danforth and Birchmount Rd. $1,000,000.

▲ **Que., Montreal**—PLANT—Christie Brown & Co., Ltd., 200 Lake Shore Rd., Toronto, Ont., plans by L. J. M. Grave 1, 1440 St. Catherine St. W., 1½ story, 200x670 ft., steel, masonry plant, Viau St. corner of Ray Murphy Ave. $4,000,000. CD 6/23.

UNCLASSIFIED

▲† **Connecticut**—AAA FACILITIES—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., Special AAA, facilities, 8 sites, 4 batteries, in Bridgeport Area, $3,000,000; Special AAA facilities, various locations 10 sites, 5 batteries, in Hartford Area, East Windsor, Manchester, Glastonbury, Portland, Cromwell, Middletown, Plainville, Farmington, Simsbury and Avon, $3,000,000.

▲ **Louisiana**—VEHICULAR TUNNEL—City, Baton Rouge, has asked Palmer & Baker, Staples Pake Bldg., Mobile, Ala., consulting engineers to make a cost study for vehicular tunnel to connect Baton Rouge and Port Allen under Mississippi River. $10,000,000.

▲ **Mass., Westboro**—RACE TRACK etc.—Allied Sports, Inc., Bernard J. Molaghan, pres., Whiting St., Lunenberg, race track ½ mi., grandstand, clubhouse, barns, etc. $1,000,000.

▲ **Mo., St. Louis**—STREET LIGHTS—City, c/o Conway B. Briscoe, dir. P. Utilities, City Hall, Zone 2, installing new street lights on all main streets of city, either fluorescent or mercury vapor type. $4,000,000. CD 4/26/43.

▲ **N. Y., New York**—TERMINALS REHABILITATION—Dpt. Marine & Aviation, Pier A, North River, New York, Zone 4, rehabilitation South and Whitehall Sts. Ferry Terminals, Phase I, Proj. D-180, $2,358,000. Roberts & Schaeffer Co., 254 W. 54 St., Zone 19, engr.

▲ **Pennsylvania**—RURAL DISTRIBUTION LINES—Southwest Central Rural Electric Co-operative Corp., 21 5th St., Indiana, 100 mi. rural distr. lines, substation facilities and sys. imprvs., Indiana Co. $1,400,000. CD 7/1/48.

▲ **Tenn., Tullahoma**—TUNNELS, etc.—U. S. Eng., Tullahoma, completion two tunnels and auxiliary equipment for gas dynamics facility, $7,000,000; imprvs. and changes in engine test facility and ram jet addn., $10,000,000; constr. supersonic circuit of propulsion wind tunnel $27,000,000, foregoing at Arnold Engineering Development Center. CD 11/14/49.

▲ **W. Va., Wheeling**—VEHICULAR TUNNEL—City, City Bldg., vehicular tunnel through Wheeling Hill terminating at new Ninth St. Bridge, $9,000,000. Knappen-Tippetts-Abbett-McCarthy, 62 W. 47 St., New York, N. Y., consult. engrs.

Dodge Street in Omaha. Built in 1948, the pavement is 60 ft. wide.

THE tremendous yardage of concrete paving listed at the right is an investment that will benefit Nebraska taxpayers for years to come. Estimated cost to property owners averages only $10 per year for a 50-ft. lot, based on a pavement life of 30 years.

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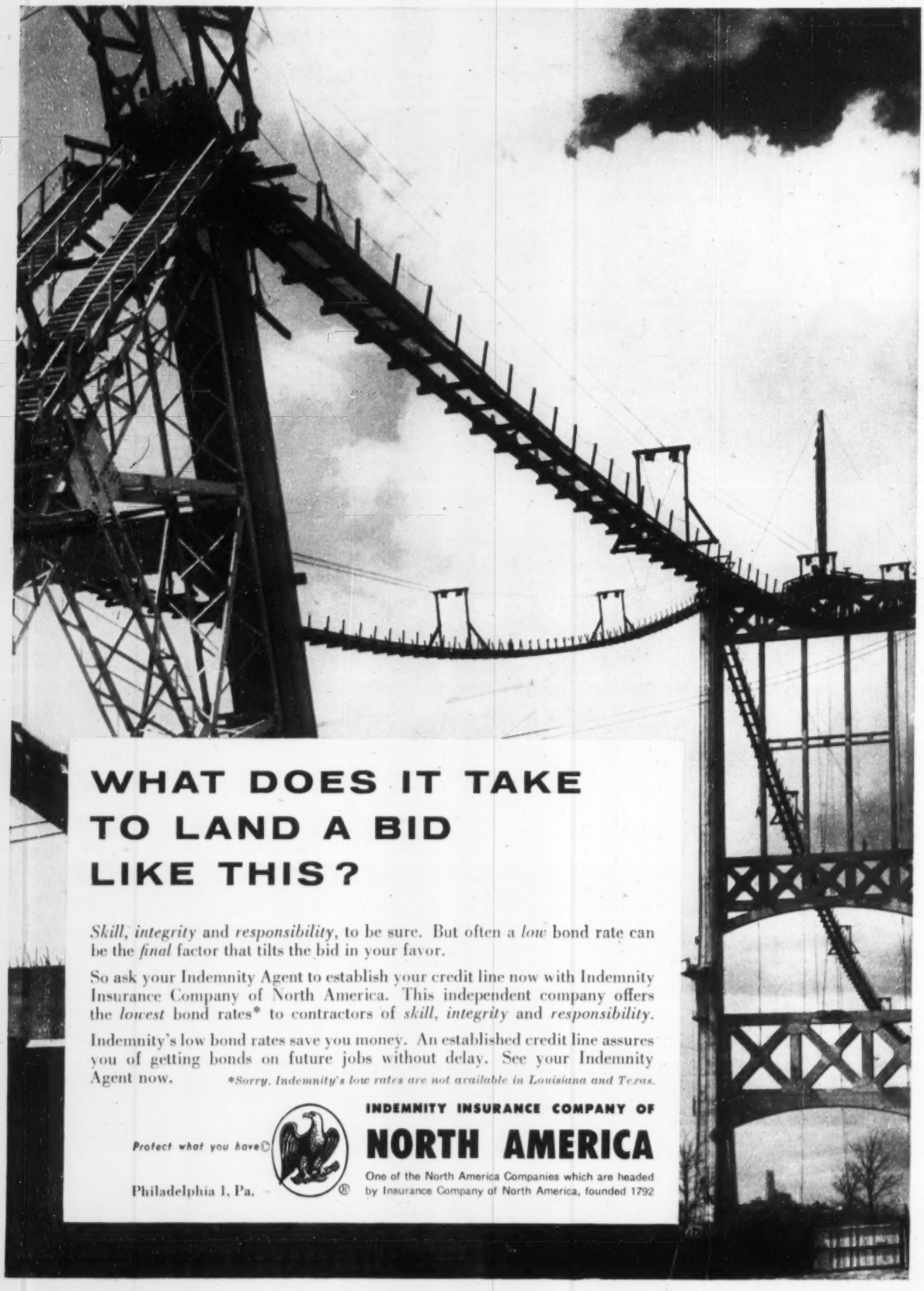
THESE 103 NEBRASKA CITIES PAVED MORE THAN 6 MILLION SQ. YD. OF CONCRETE STREETS FROM 1949 TO 1953

CITY	SQ. YD.
Alliance	208,236
Alma	73,505
Ansley	10,370
Arnold	32,708
Ashland	29,936
Auburn	32,493
Aurora	5,082
Bancroft	14,610
Bartley	14,483
Bayard	43,830
Beatrice	46,510
Beemer	3,493
Bellevue	185,541
Benkelman	1,350
Bennington	6,747
Blair	4,594
Bloomfield	16,508
Blue Hill	3,847
Broken Bow	55,204
Bruning	6,145
Campbell	12,296
Central City	22,606
Chadron	49,550
Coleridge	15,700
Columbus	242,071
Cozad	82,886
Creighton	10,000
Crete	5,278
Crofton	12,420
Curtis	39,095
David City	24,409
Elkhorn	4,743
Elm Creek	2,810
Falls City	18,559
Franklin	21,626
Fremont	301,665
Geneva	15,200
Gering	75,765
Gordon	16,625
Gothenburg	20,670
Grand Island	441,931
Grant	12,520
Hartington	35,635
Hastings	78,731
Hemingford	42,175
Hildreth	2,250
Holdrege	44,888
Indianola	8,595
Kearney	105,733
Leigh	10,670
Lexington	74,674
Lincoln	60,178
Loup City	6,975
Louisville	31,802
Lyons	5,510
McCook	118,829
Madison	8,000
Millard	20,020
Minden	1,789
Mitchell	800
Nebraska City	67,911
Neligh	71,480
Newcastle	15,300
Norfolk	31,880
North Bend	14,781
North Platte	306,122
Offutt Field	32,180
Ogallala	63,325
Omaha	1,414,158
O'Neil	12,000
Oshkosh	33,985
Osmond	10,550
Oxford	66,450
Papillion	46,342
Pender	11,020
Peru	1,500
Plainview	6,840
Plattsmouth	64,663
Ralston	18,097
Randolph	46,681
Schuyler	4,450
Scottsbluff	169,306
Scribner	7,303
Seward	94,457
Sidney	72,800
S. Sioux City	202,468
Spalding	16,536
Springfield	1,996
Stanton	3,973
Superior	56,130
Sutherland	34,850
Sutton	1,847
Syracuse	54,264
Tekamah	33,639
Valentine	51,611
Valley	57,290
Wahoo	48,014
Wakefield	4,035
Wayne	30,987
Weeping Water	2,395
West Point	44,095
Wolbach	31,171
York	20,240
TOTAL	6,279,993



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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
STREETS AND ROADS

December 7, 9 Massachusetts December 15 Rhode Island

† **N. H., Portsmouth**—WAREHOUSE, etc.—BA On Or About 12/17—U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass. 1 story, 200x200 ft. concrete block, warehouse, base, bulk supply No. 1C; 1 story, 32x51 ft. concrete block paint and dope storage bldg.; 201x152x20 ft. high engine build-up bldg., concrete fdns., etc.; 1 story, 142x64x11 ft. brick veneer base parachute shop (77 ft. drying tower); storm drainage sys., sanitary sewer, floor waste and water services (heating service lines and electrical sub-station are not included); preparation of subgrade for pavements, b. conc. pavements, rough grading, topsoiling and seeding, Portsmouth Air Force Base, ENG-19-016-55-55. $700,000-$800,000. Plans deposit $15. CD 12/6/51.

BIDS ASKED—BUILDINGS

▲ **Mass., Westwood**—SCHOOL—BA 12/15—Town, High School Bldg. Comn., T. S. Munson, chn., c/o Supt. Schools, Colburn School, High St., high school, Nahatan St. $1,200,000. Plans deposit $50, refundable. Extended date. Coletti Bros., 687 Boylston St., Boston, archts. CD 11/12.

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., Augusta,
Thomas DiCenzo, Calais, Me. CA **$766,820**. b. conc. 5.893 mi. F.A. Proj. F 044-2 (4) and "44", Edmunds and Dennysville. Bids Nov. 17.

VERMONT—State Hy. Dpt., State Office Bldg., Montpelier,
S. V. Rossi Constr. Co., 49 McDermott Ave., Torrington, Conn., LB **$662,028**, est. $700,000. highway work, Woodstock, Pomfret and Barnard. Bids Nov. 19. CD 11/5.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Westcott Constr. Co., North Attleboro, Mass. LB **$3,294,675**. 3 grade crossing eliminations, Mansfield. Bids Nov. 23. CD 11/16.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Coleman Bros. Corp., 40 Central St., Boston, Mass. LB **$1,738,669**. Sect. 1, Contr. 2 Northeast Expressway, Chelsea. Bids Nov. 23. CD 10/26.

▲† **Piatt Constr. Co.**, 99 First St., Cambridge, Mass. LB **$1,323,000**, est. $1,500,000. geological physics laboratory, Research Center Bldg. F, ENG-19-016-55-38, BEDFORD, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Nov. 19. CD 11/3.

† **A. J. Martini, Inc.**, 9 Jerome St., Medford, Mass. LB **$637,000**, est. $800,000-$900,000. 2 maintenance hangars with shops, Hanscom Air Force Base, ENG-19-016-55-39, BEDFORD, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Nov. 16. CD 11/3.

Peter Kiewit Sons Co., 490 Pleasant St., Pawtucket, R. I. LB **$917,350**, est. $900,000. Contr. 203, Sect. 4 relief sewer, South Charles River to Watertown Square, Watertown, Newton and Waltham, BOSTON, MASS. State, Metropolitan Dist. Comn., Constr. Div., 20 Somerset St., Boston, Mass. Bids Nov. 18. CD 11/3.

BUILDINGS
LOW BIDS AND CONTRACTS

▲ **Maurice A. Rothenberg**, 378 Appleton St., Holyoke, Mass. Owner Builds. Separate Contracts. **$1,000,000**. APARTMENT 9 bldgs., 63 units, Fowler Property Appleton, Locust and Sycamore Sts., HOLYOKE, MASS. J. Hubert, 8 N. Main St., South Hadley Falls, Mass., archt. CD 9/3.

Chick's Constr. Co., Box 214, Clinton, Mass. CA **$789,073**, est. $750,000. North Oxford and Oxford Center Elementary SCHOOLS, OXFORD, MASS. Town, Frank Sanella, supt. Schools, Oxford, Mass. CD 11/19, under LB.

▲ **Emil Muller Constr. Co.**, 911 Commerce Bldg., Rochester, N. Y., CA, **$7,000,000**, SHOPPING CENTER, to be called Hamden Plaza, on 33-acre tract at Dexwell Ave., HAMDEN, CONN. National Plazas, Inc., c/o contractor. CD 12/18.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES

December 7 Maryland, New Jersey

STREETS AND ROADS

December 7 Maryland December 8 Delaware

NEW JERSEY—BA 12/21—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,
Hudson Co.—Contract N-23, piers for West Viaduct extending from Grand to Second Sts.; constr. piers, abutments for concrete deck for portion of Ramps A and B viaducts adjoining the West Viaduct: constr. 6 piers for North Terminal Ramps at Erie R.R. yards in vicinity of Tenth St.; new streets, removal of existing and constr. new pavements in existing streets; resurf. existing street pavements, etc. in Jersey City, Hudson Co., in connection with constr. of Newark Bay-Hudson County Extension of New Jersey Turnpike. Plans deposit $15. Howard, Needles, Tammen & Bergendoff, 55 Liberty St., New York 5, N. Y., consult. engrs. CD 8/20/53, under Streets and Roads.

BIDS ASKED—BUILDINGS

Pa., Larchmont—HIGH SCHOOL—BA 12/7—Marple-Newtown Joint High School Bd., Larchmont, joint Junior and Senior High School. $883,000. Joseph J. Wigmore, 117 S. 17 St., Phila., archt. CD 8/27.

▲ **Pa., Chester**—Y.M.C.A. BLDG.—BA 12/9—Young Mens Christian Assn., 7th and Edgmont Sts., Central Y.M.C.A. BLDG. $1,000,000. Howell Lewis Shay, Packard Bldg., Phila., archts, Keast & Hood, 2031 Chestnut St., Phila., engrs. CD 6/23/53.

N. J., Brown's Mill—SCHOOL— BA 12/16—Pemberton Twp. Bd. Educ., Brown's Mill elementary school. $566,000. Alexander Merchant & Son, 1 Elm Row, New Brunswick, archts. CD 11/8.

▲ **N. Y., New York**—HOUSING—BA 12/20—New York City Housing Auth., 299 Broadway, Zone 7 (1) foundations and general constr. (2) heating and ventilating (3) electrical work and plumbing; furnishing, erecting elevators for Robert F. Wagner, Sr. Houses (Proj. No. NY-5-24), Sect. I, incl. Bldg. Nos. 1 through 13, (inclusive) located in area bounded by a proposed new street, Franklin D. Roosevelt Dr., E. 120 St. and 1st Ave., Manhattan Boro. Plans deposit $75, $25 for elevators. CD 2/18/48.

▲ **Pa., Pittsburgh**—STATE OFFICE—BA 12/22—General State Auth., 18 and Herr Sts., Harrisburg, constr. state office bldg., Liberty Ave. and Blvd. of the Allies $6,000,000. Plans deposit $50. Altenhof & Brown, 1230 Park Bldg., Zone 22, archts. Tower, Levinson & Long, 1230 Park Bldg., Zone 22, engrs. CD 4/30.

Pa., Phila.—PLANT—Bids Asked—Pepsi Cola Co., 3 W. 57 St., New York, N. Y., bottling plant. $800,000. Skidmore, Owings & Merrill, 575 Madison Ave., New York, N. Y., archts.

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

William A. Smith Contr. Co., Inc., 1401 Fairfax Trafficway, Kansas City, Mo., CA **$922,368**. Schedules 1, 3 and 4, access railroad and highways and imprv. existing roads, near Massena, St. Lawrence Co., Spec. No. PA-5-11003, St. Lawrence Contr. No. 4, NEW YORK, Power Authority of the State of New York, 270 Broadway, New York 7, N. Y. Bids Oct. 25. CD 10/27, under LB.

† **Nager Electric Co.**, 420 Broadway, Brooklyn 11, N. Y. LB **$898,000** Base, LB **$564,000** Alt., modernization electrical distr. sys., Brooklyn Army Base, Serial No. ENG-30-075-55-16, BROOKLYN, N. Y. U. S. Eng., 80 Lafayette St., New York 13, N. Y. Bids Nov. 18. CD 9/29.

▲ **NEW JERSEY**—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,
Charles F. Vachris, Inc., 9024 Ditmas Ave., Brooklyn, N. Y., CA **$1,275,050**, Contract N-6, piers and 4 abutments for viaducts for Ramp E, F, G & H, portion of Newark Bay-Hudson Co. Exten. on viaduct, retaining wall etc. Newark Airport Interchange of N. J. Turnpike, City of Newark, Essex Co. Bids Nov. 9. CD 11/12, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 North Office Bldg., Harrisburg,
Western Pa. Asphalt Paving Co., P. O. Box 1402, Erie, Pa. LB **$64,311**, constr. 5,632 ft. crushed aggregate base with bit. surf. variable in width, T.R. 98, Fairfield Twp., Fairfield Boro, Erie Co.;
Jack & Jim Maser, Inc., Box 116, Brownstown, Pa., LB **$167,194**, constr. 2,575 ft. crushed aggregate base with bit. surf. variable in width, T.R. 772, West Earl Twp. Lancaster Co.;
Kebert Constr. Co., R.D. 6, Meadville, Pa., LB **$71,015**, wid'n and overlay 5,830 ft. existing road with crushed aggregate base and bit. surf. variable in width, T.R. 108, Hickory Twp., Lawrence Co.;
Allegheny Asphalt & Paving Co., Inc., 801 Bingham St., Pittsburgh 3, Pa., LB **$192,532**, wid'n. and overlay 15,945 ft. existing road with gran. slag base and bit. surf. variable in width, T.R. 288, Ellwood City Boro, Wayne Twp., Lawrence Co.;
Union Paving Co., 1227 N. Broad St., Phila. 22, Pa. LB **$634,992**, constr. 2,416 ft. divided hy. of plain c. conc. base with bit. surf. variable in width, Pennsylvania Blvd., L.R. 67005, Philadelphia, Philadelphia Co.;
Ralph V. Daniels, Inc., 338 N. 29 St., Camp Hill, Pa. LB **$79,137**, wid'n. left and right 15,538 ft. existing road with crushed aggregate base 2 ft. 10 in. wide and surf. new and existing base with bit. surf. 22 ft. wide, L.R. 66157 (1); 66020 (3), Springetsbury Twp. York Co. Bids Nov. 19. CD 10/27.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 North Office Bldg., Harrisburg.
J. Richard Nissley, Landisville, Pa., LB **$2,458,913**, two plate girder and two I-beam bridges, 6,036 ft. crushed aggregate base with bit. surf. variable in width, T.R. 222, Reading City, Bern and Muhlenberg Twps. Berks Co.;
W. L. Dunn Constr. Co., Adams St., Cochranton, Pa., LB **$83,564**, I-beam bridge, 2,950 ft. crushed aggregate base with bit. surf. variable in width, T.R. 98, Fairfield Twp. Crawford Co.;
Fred W. Ewing, Inc., 405 W. Main St. Corry, Pa., LB **$1,309,610**, const. two continuous concrete deck I-beam and one concrete deck girder and one I-beam bridges, L.R. 74, at Sharon, Mercer Co. Bids Nov. 19. CD 10/27.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
Nello L. Teer Co., Box 1131, Durham, N. C. CA **$550,326**. wid'n., surf. 4.741 mi. State Rte. 16, Contr. D 239-2-120, Dorchester Co. CD 10/4, under LB.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
Princemont Constr. Corp., 11308 Fern St., Silver Spring, Md. LB **$894,849**. grading, drainage, surf. 2.259 mi. U. S. Rte. 240, near Wash., D. C., Contr. M-533-1-320, Montgomery Co.;
Eugene Chaney, Upper Marlboro, Md. LB **$328,183**. grading, surf. 4.567 mi., State Rte. 6, LaPlata, Contr. CH 288-1-520, Charles Co.;
W. E. Graham Constr. Co., Cleveland, N. C. LB **$712,383**, surf. 3.137 mi. Leitersburg By-Pass, Contr. W 445-1-620, Washington Co. Bids Nov. 16. CD 11/3.

Intercounty Constr. Co., 4720 Baltimore Ave., Hyattsville, Md. CA **$566,000**. Anacostia River Sewage Pumping Station, Contr. 264-S, HYATTSVILLE, MD. Washington Suburban Sanitary Comn., Hamilton St., Hyattsville, Md. Bids Nov. 15, awarded Nov. 17. CD 11/18.

BUILDINGS
LOW BIDS AND CONTRACTS

▲ **Planet Constr. Corp.**, 11 W. 42 St., New York 36, N. Y. LB **$2,057,000**, general constr.;
Martin Epstein Co., Inc., 227 Lewis Ave., Brooklyn 21, N. Y., LB **$321,350**, electrical work for Junior HIGH SCHOOL 67, Marathon Parkway and 62 Ave., Queens Boro, E-691, NEW YORK. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Nov. 19. CD 10/22.

George Klein, c/o H. I. Feldman, archt., 415 Lexington Ave., New York 17, N. Y. Owner Builds. **$500,000**. 2 story garden APARTMENT for 52 families, Hudson Pl. and Cedarhurst Ave., CEDARHURST, N. Y.

▲ **Caristo Constr. Corp.**, 26 Court St., Brooklyn 2, N. Y. LB **$1,949,000**, general constr. JUNIOR HIGH SCHOOL 218, Main St. and Gravett Rd., E-833, FLUSHING, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Nov. 23. CD 10/22.

▲ **Royale Lawns Homes**, c/o Gale-Oppenheimer, 113 W. Sunrise Hy., Freeport, N. Y. Owner Builds. **$1,000,000**. 75 HOUSES on tract at South Bayview Ave. and Davidson Pl., FREEPORT, N. Y.

▲ **Uris Brothers**, 575 Madison Ave., New York 22, N. Y. Owner Builds. **$25,000,000**. 30 story OFFICE, Lexington Ave. between 46 and 47 Sts., NEW YORK, N. Y. Emery Roth & Sons, 575 Madison Ave., New York 22, N. Y. archts.

▲ **35 E. 35 St. Corp.**, c/o H. I. Feldman, archt., 415 Lexington Ave., New York 17, N. Y. Owner Builds. **$1,000,000**. 12 story APARTMENT, 35 E. 35 St., NEW YORK, N. Y.

▲ **Ranes Constr. Corp.**, 151 Montague St., Brooklyn 2, N. Y. CA **$1,996,630**, general constr. JUNIOR HIGH SCHOOL 59, Ridgedale, Grayson and Lucas Sts., Queens Boro, E-665 SPRINGFIELD, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Oct. 21. CD 10/28, under LB.

▲ **W. E. O'Neill Contr. Co.**, 412 Syracuse-Kemper Bldg., Syracuse, N. Y., CA **$1,591,087**, woods products LABORATORY, New York State College of Forestry, Syracuse University, SYRACUSE, N. Y. Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, N. Y. Bids Oct. 14, awarded Nov. 16. CD 11/9.

▲ **North Shore Estates**, c/o Henry W. Johanson, archt., 2 Main St., Roslyn, N. Y. Owner Builds. **$2,700,000**. 100 HOUSES, Foch Blvd., north of Hillside Ave., WILLISTON PARK, N. Y.

▲ **Anthony P. Miller, Inc.**, 3333 Arctic Ave., Atlantic City, N. J., CA, **$1,155,357**. four PATIENT BLDGS. and KITCHEN BLDG. C addns., alterations, State Colony, VINELAND, N. J. State Div. Purchases & Property, State House, Trenton, N. J. Bids Aug. 5. CD 7/27.

H & C Builders c/o Louis M. Steuber, archt., 2092 Morris Ave., Union, N. J., Separate Contracts, **$500,000**. RESIDENTIAL DEVELOPMENT, POINT PLEASANT, N. J.

▲ **Becker & Lipschitz**, 4411 N. Broad St., Phila., Pa. Separate Contracts. **$1,000,000**. RESIDENTIAL DEVELOPMENT, Kennett St., etc., AMBLER, PA.

Alex H. Alessi, West Ave., Wayne, Pa., Separate Contracts. **$528,000**. RESIDENTIAL DEVELOPMENT, Manayunk Ave. and Bryn Mawr Ave., CYNWYD, PA. John B. Thompson, 125 Coulter Ave., Ardmore, Pa., archt.

Turner Constr. Co., 1500 Walnut St., Phila., Pa., CA **$500,000**, MANUFACTURING BLDG., LANCASTER, PA. Radio Corp. of America, New Holland Pike, Lancaster, Pa. Vincent G. Kling, 917 Corinthian Ave., Phila., Pa., archt.

Frank J. Rossi, 227 W. Lancaster Ave., Paoli, Pa., Separate Contracts, **$500,000**. RESIDENTIAL DEVELOPMENT, Malin Rd., MALVERN, PA.

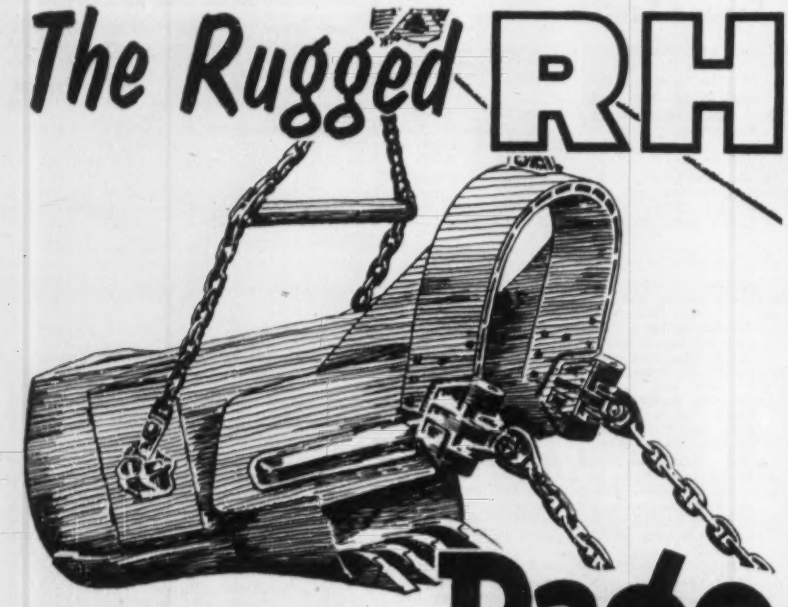
Parkman Homes, Inc., 1901 Devereaux St., Phila., Pa. Separate Contracts. **$500,000**. RESIDENTIAL DEVELOPMENT, Rhawn St. and Tabor Rd., PHILA., PA. Christian Fries, 3701 N. Broad St., Phila., Pa., archt.

George Coopersmith, Phillipsburg, N. J., LB **$866,166**. general contract Community Senior HIGH SCHOOL, Quakertown, PA. Quakertown Area Joint School Auth., Quakertown, Pa. Bids Nov. 16. CD 11/5.

Moyer Brothers, 2605 Beale Ave., Altoona, Pa., LB **$793,000**, general constr. Secondary SCHOOL bldg. for Northern Area Joint School Bd., SUGAR GROVE, PA. State Public School Building Auth., 101 S. 25 St., Harrisburg, Pa. Bids Nov. 18. CD 10/20.

▲ **Valley Forge Homes, Inc.**, 107 N. Aberdeen Ave., Wayne, Pa., Separate Contracts. **$1,360,000**. RESIDENTIAL DEVELOPMENT, Greenway Ave., etc., SWARTHMORE, PA. Jack Swerman, 405 Market St., Chester, Pa., archt.

The Rugged RH



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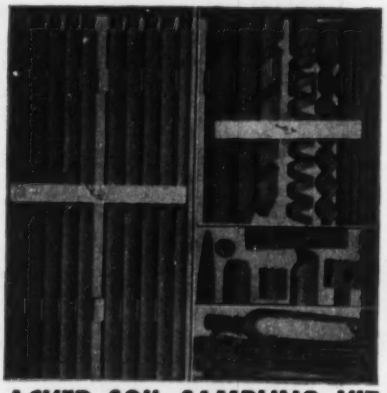

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Duffy & Patton, 218 S. 69 St., Upper Darby, Pa. Separate Contracts. $500,000. RESIDENTIAL DEVELOPMENT, Walker Rd., VALLEY FORGE, PA. H. Barrett Pennell, 355 Lancaster Ave., Haverford, Pa., archt.

Finnelli Bros., 15 S. Glendale Rd., Havertown, Pa. Separate Contracts. $500,000. RESIDENTIAL DEVELOPMENT, Walker Rd., VALLEY FORGE, PA. H. Barrett Pennell, 355 Lancaster Ave., Haverford, Pa., archt.

Frank H. Wilson, 1255 Coulter Ave., Ardmore, Pa., CA $300,000. DORMITORY, HAVERFORD, PA. Haverford College, Haverford, Pa. CD 6/28.

Wildberger Best Constr. Co., 2025 E. North Ave., Baltimore 13, Md. CA $715,860. 1 story, brick, steel, concrete Franklin Elementary SCHOOL, Reisterstown, TOWSON, MD. Baltimore Co., Bd. Educ., Aigburth Rd., Towson, Md. CD 10/12, under LB.

Lacchi Constr. Co., 2023 Maryland Ave., Baltimore 18, Md. LB $734,700. 1 story, concrete, steel, masonry Perry Hall Elementary SCHOOL, Perry Hall, TOWSON, MD. Baltimore Co. Bd. Educ., Aigburth Rd., Towson, Md. Gaudreau & Gaudreau, 320 N. Charles St., Baltimore 1, Md., archts. Bids Nov. 10. CD 8/11.

▲ F & S Constr. Co., 1800 W. Bethany Home Rd., Phoenix, Ariz., Own Forces. $4,875,000 (1st unit) Total est. cost $60,000,000. 500 (total 4,000) HOMES, Rte. 301 McKendree Rd., Brandywine Area, Hoffman Heights, UPPER MARLBORO, MD. Completed project will include schools, churches and shopping center.

National Automobile Dealers Assoc., 1026 17 St. N.W., Wash., D. C., rejected bids Sept. 22, 8 story, steel, stone, brick, aluminum OFFICE, 2000 K St. N.W., WASH., D. C. LB, $794,000. Will re-advertise. CD 9/28, under LB.

▲ Har-Bern Constr. Co., c/o Franklin Builders Inc., Wilson Road, Wilmington, Del. Separate Contracts. $1,500,000. RESIDENTIAL DEVELOPMENT, off Harvey Rd., CLAYMONT, DEL.

▲ E. I. du Pont de Nemours & Co., Inc., du Pont Bldg., Wilmington, Del., Own Forces, $1,815,000. LABORATORY, for long-range and fundamental research of explosives and organic chemicals, at du Pont's experimental station, WILMINGTON, DEL. CD 8/21/46.

SOUTH

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† J. W. Bateson Co., Inc., 420 Gibralter Life Bldg., Dallas, Tex., CA, $1,312,251. maintenance hangar, Pope Air Force Base, ENG-31-075-55-12, FORT BRAGG, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. Bids Nov. 3. CD 11/10, under LB.

† R. P. Farnsworth & Co., Box 850, New Orleans, La. CA, $809,000. Air Force Reserve Training Center, Alvin Callender Field, NOY, 82592, Spec. 42632, Belle Chasse, NEW ORLEANS, LA. Eighth Naval Dist., Bldg. 16, Naval Dist., Algiers, New Orleans, La. Bids Nov. 9, awarded Nov. 19. CD 11/19, under LB.

▲ Hebert Bros., Box 393, Plaquemine, La. LB, $1,326,486. sewerage sys. imprvs., incl. sanitary sewer extens. sewerage pumping stations, sewage ejector stations, sewerage treatment plant, THIBODAUX, LA. City, Thibodaux, La. Bids Nov. 18. CD 11/8.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ A. C. Sanford, Albany, Ga., CA $1,125,902 5 story, 94-room HOSPITAL, air-conditioned, MONTGOMERY, ALA. St. Margaret's Hospital, 834 Adams Ave., Montgomery, Ala. CD 7/6.

Southern Builders, Inc., Box 1815, Shreveport, La. LB, $915,000, est. $800,000. large YOUTH and ACTIVITIES and STOCK JUDGING BLDG. Louisiana State Fair Grounds, SHREVEPORT, LA. State Bldg. Auth., State Capitol, Baton Rouge, La. Bids Nov. 18. CD 10/20.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES
December 14 Ohio

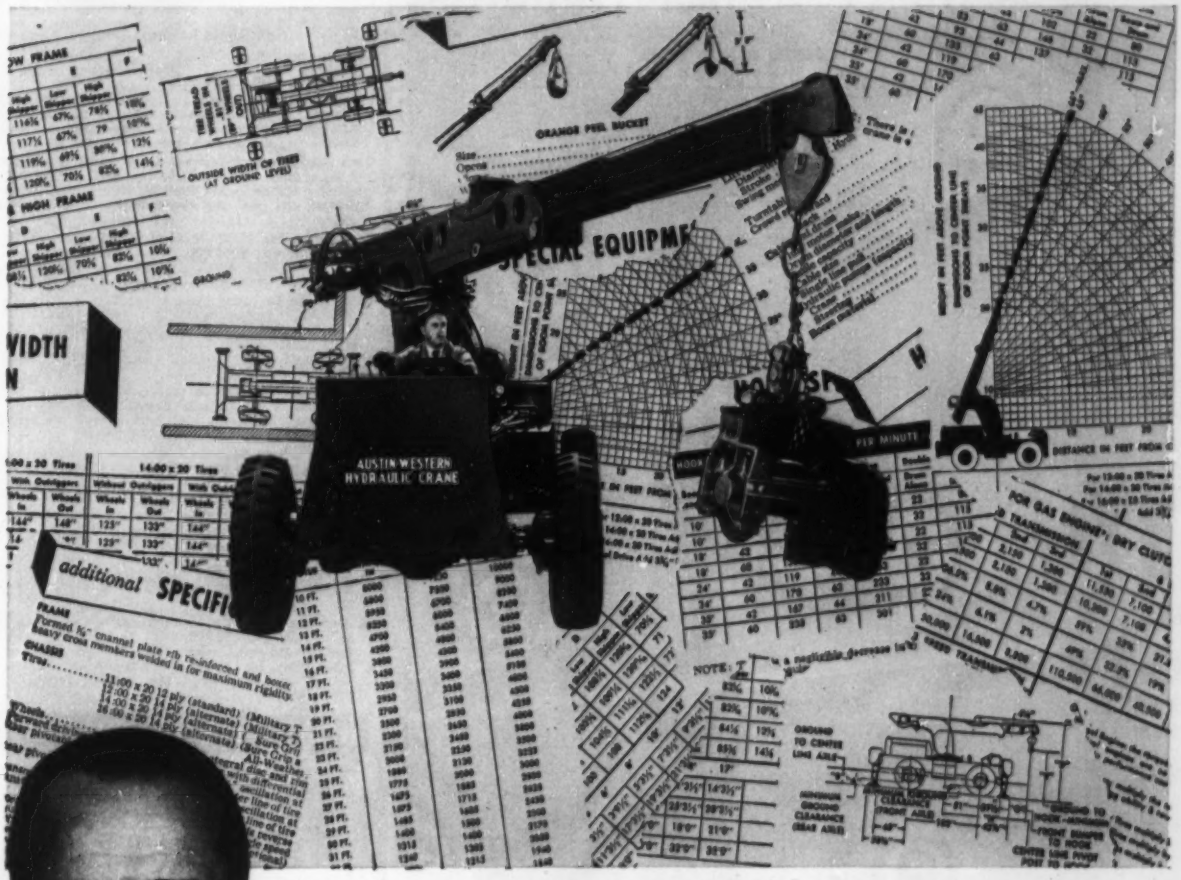
STREETS AND ROADS
December 12 Wisconsin December 14 Ohio

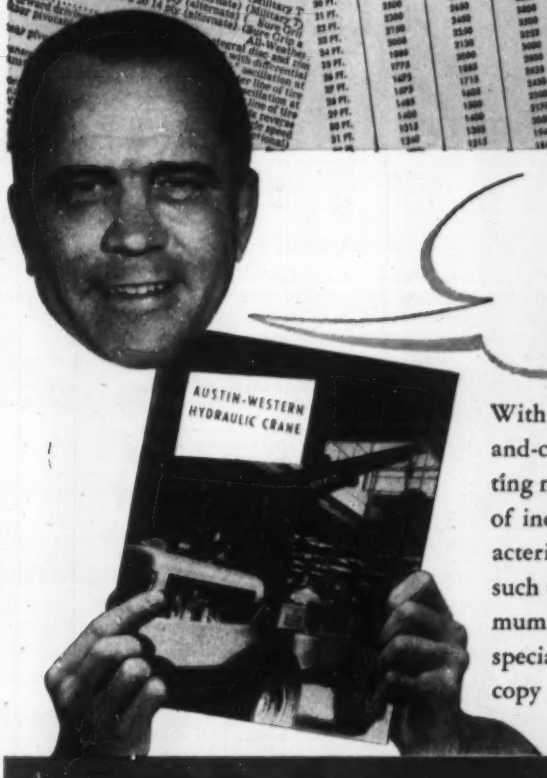
HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ MICHIGAN—State Hy. Dpt., Escanaba,
A. Lindbergh & Sons, Inc., Ishpeming, Mich. LB $1,060,138, est. $1,000,000. concrete dual hy. 6.17 mi. US-41 and M-28 from north city limits of Negaunee, F 52-40 C1-R, F 52-40 C2-U (F 108 3), Marquette Co.;
I. L. Whitehead Co., Sault Ste. Marie, Mich. LB $530,664, est. $480,000. stabilized aggregate surf. 5.4 mi. M-35 from US-41 in Baraga Village, SS 7-16 C3-U, SS 7-16 C4-R (S-306 2), Baraga Co.;
Thornton Constr. Co., Hancock, Mich. LB $219,588, est. $240,000. stabilized aggregate surf. 3.793 mi. M-26 from Lake Roland south west, F 31-31 C11-R (F 194 6), Houghton Co. Bids Nov. 16. CD 11/4 and 11/10.

(Continued on page 72)





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(Continued from page 70)

BUILDINGS

LOW BIDS AND CONTRACTS

Pearson Constr. Co., Benton Harbor, Mich. CA $750,000. 160x325 ft. cold STORAGE PLANT, Pipestone Rd., BENTON HARBOR, MICH. Southern Michigan Cold Storage Co., Carl Steimle, pres., Sodus, Mich.

Baker, VanderVeen, DeYoung & Kraker, 3640 Clyde Park S.W., Grand Rapids, Mich. CA $627,316. 4 elementary SCHOOLS, BIG RAPIDS, MICH. City, George Granger, city mgr., Big Rapids, Mich. CD 10/27, under LB.

Ellis Constr. Co., 23100 W. Eight Mile Rd., Detroit 19, Mich. CA Est. $500,000. Torrey Woods Elementary SCHOOL, GROSSE POINTE, MICH. City, 17150 Maume St., Grosse Pointe, Mich. Bids Oct. 19. CD 10/7.

O. W. Burke Co., 1032 Fisher Bldg., Detroit, Mich. CA $962,449. general contract 2 special TREATMENT BLDGS., Northville State Hospital, NORTHVILLE, MICH. State, A. N. Langius, dir. State Bldg. Dpt., Lewis Cass Bldg., Lansing, Mich. CD 11/11, under LB.

▲ **Northwood Organization**, 10626 W. Nine Mile Rd., Oak Park 37, Mich. Owner Builds, $1,200,000. Sylvan Manor Development, 100 brick HOMES, Middlebelt and Orchard Lake Rd., OAK PARK, MICH.

▲ **Barton-Malow Co.**, 2631 Woodward Ave., Detroit, Mich. LB $1,233,265. Elementary SCHOOL, Church and Dartmouth Sts.; Clinton Elementary SCHOOL; Elementary SCHOOL, Stratford and Pearson Sts., OAK PARK, MICH. City, Louise Shaw, city clk., Oak Park, Mich. Bids Nov. 19. CD 10/21.

Four Square Home Builders, Inc., 19966 Dequindre St., Detroit 24, Mich. CA $800,000. 70 brick ranch HOMES, 12 Mile Rd. and Garfield, ROSEVILLE, MICH. Carl R. Sams, Inc. (agent), Rock and Garfield Sts., Roseville, Mich.

▲ **Hamilton Constr. Co.**, 1418 Cadillac Tower, Detroit, Mich., CA Est. $2,700,000. Shelby Village Subdivision, 265 brick ranch HOUSES, Auburn Rd. between Ryan and Mound Rds., UTICA, MICH. Prudential Investment Co., 1418 Cadillac Tower, Detroit, Mich.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
December 14 Texas

STREETS AND ROADS
December 14, 15 Texas

Minn., Crystal—BA 12/14—Village, Mrs. Clara Hillstron, clk., interceptor and trunk sanitary sewerage sys., Dist. 6A lateral sewers, $500,000. Extended date. Pfeifer & Shultz, 702 Wesley Temple Bldg., Minneapolis, engrs. CD 11/11.

Minn., Anoka—BA 12/17—State, Dpt. Admin., State Capitol and City of Anoka, C. R. Johnson, clk., joint sewage treatment plant to serve Anoka State Hospital and City of Anoka, $600,000. Plans deposit $30. Toltz, King & Day, 1509 Pioneer Bldg., St. Paul, engrs. CD 7/14/50.

Neb., Omaha—BA 12/22—Metropolitan Utilities Dist., 18 and Harney Sts., chemical bldg. at Florence water pumping station. $900,000. D. O. Detweiler, c/o owner, engr. CD 7/8/53.

▲† Ia., Sioux City—HOUSING UNITS—BA On Or About 1/15—Purch. & Contg. Officer, 521st Air Defense Group, Sioux City Air Force Base, Sioux City, construction, landscaping, etc. on this base of five standard frame housing units, Sioux City Air Force Base. Plans deposit $25. CD 2/2/53.

BIDS ASKED—BUILDINGS

▲ Tex., El Paso—PLATFORMING UNIT—Bids Asked—Standard Oil Co. of Texas, Womble Blvd., constr. 4,300 bbl. platforming unit. $1,750,000. CD 5/23/51.

SOON LETS CONTRACT—BUILDINGS

▲ Colo., Denver—HOSPITAL—Children's Hospital, 1056 East 19 Ave., soon lets contract hospital addn. $1,250,000. Linder & Wright, Insurance Bldg., engrs. and archts. CD 3/16/53.

▲ Tex., Amarillo—OFFICE—Pioneer Natural Gas Co., 418 Polk St., soon lets contract 7 story, bsmnt. office. $1,250,000. Emmett F. & James F. Rittenberry, Fisk M. & P. Bldg., archts. CD 11/4.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Hallett Constr. Co.**, Crosby, Minn., LB, $720,428, stringing conductors and overhead ground wires, Jamestown Fargo 230-kv transmission line, Missouri-Souris Dist., Missouri River Basin Proj., Spec. DC-4269, NORTH DAKOTA, Bureau Reclamation, Dpt. Interior, Bismarck, N. D. Bids Nov. 16. CD 10/8.

† **Connor & Stavely Constr. Co.**, 1805 Grand St., Kansas City, Mo., LB $983,463, constr. and repair dikes and revetment at Missouri River, near Decatur, Neb., Upper Blackbird-Upper Decatur Bends, Inv. 25-066-55-64, NEBRASKA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Nov. 23. CD 11/11.

▲† **Peter Kiewit Sons' Co.**, Southeast Station, Wichita 17, Kan. CA $2,771,929. airfield pavement Sect. II Smoky Hill Air Force Base, Inv. 23-028-55-19, SALINA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City, Mo. CD 11/9, under LB.

▲† **Bushman Constr. Co.**, 4638 J. C. Nichols Parkway, Kansas City, Mo. CA $2,364,315. apron pavement,

drainage AGE FY-55 Part I Forbes Air Force Base, Inv. 23-028-55-12, TOPEKA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. CD 11/1, under LB.

▲† **Robert E. McKee,** 1918 Texas St., El Paso, Tex., LB $1,959,700, Base bid; LB $1,905,200, Alt. bid, maintenance hangar, Abilene Air Force Base, ENG-41-443-55-33, ABILENE, TEX. U. S. Eng., 100 W. Vickery Blvd., Fort Worth, Tex. Bids Nov. 18. CD 10/28.

† **Brown & Root, Inc.,** Box 3, Houston, Tex., CA $515,173, runway and taxiway exten. and warm-up pads, Matagorda Isle Air Force Base, Inv. No. ENG-41-243-55-17, MATAGORDA, TEX. U. S. Eng., Box 1229, Galveston, Tex. Bids Nov. 3. CD 11/10, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

The Schattgen Co., Union Rd. near Bayless Ave., Affton 23, Mo. Owner Builds. $500,000. 40 or more brick veneer RESIDENCES, concrete bsmnt., in Indian Hills sbdivision on Union Rd. about 1 mi. south of St. Louis city limits, AFFTON (ST. LOUIS 23 P.O.), MO.

▲ **John Epple Constr. Co.,** 1417 Hickory St., Columbia, Mo. LB $1,792,000. Base Bid No. 1. $1,770,000 Base Bid No. 2, general work;

C. Wallace Plumbing Co., 2224 Summer St., Dallas, Tex., LB $922,531. plumbing, heating, ventilating and air-conditioning work for 4 story, brick, steel, concrete MEDICAL SCIENCES BLDG. with 2 story wings and 3 story connecting corridor to teaching hospital, COLUMBIA, MO. The Curators of the University of Missouri, Leslie Nolan, vice pres., Jesse Hall, Columbia, Mo. Bids Nov. 18. CD 11/3.

▲ **Peterson-Byers Development Co.,** 6 E. 11 St., Kansas City, Mo. Owner Builds. $10,500,000. Meadowbrook Addition, 800 HOMES, sewage treatment plant, Antioch Rd., village of Gladstone, NORTH KANSAS CITY, MO.

▲ **Jas. H. Stanton Constr. Co.,** 9001 Wornall Rd., Kansas City, Mo. Owner Builds. $11,000,000. 500 HOUSES, 215 acres, Sherwood Estates, Vivion Rd. and North Norton St., NORTH KANSAS CITY, MO. Hare & Hare, 114 W. 10 St., Kansas City, Mo., landscape archts.

James C. & Robert G. McKelvey, 8520 Olive Blvd., St. Louis 24, Mo. Owner Builds. $800,000. 100 RESIDENCES, 125 acre site on Ries Rd. near Ballwin Rd. in Ballwin Hills subdivision, ST. LOUIS COUNTY, MO. Roland Horton & Son Eng. Co., 153 S. Laclede Station Rd., St. Louis 17, Mo., engr.

Babcock & Wilcox Co., 1012 Baltimore St., Kansas City, Mo. LB $998,694, boiler Kaw Power STATION, KANSAS CITY, KAN. Bd. P. Utilities, City Hall, Kansas City, Kan. Burns & McDonnell Eng. Co., 95 and Troost Sts., Kansas City, Mo., engr. CD 7/1.

M. K. Eby Constr. Co., Inc., 610 N. Main St., Wichita, Kan. CA $601,140. Insurance OFFICE, MCPHERSON, KAN. Farmers Alliance Insurance Co., McPherson, Kan. Bids Nov. 5. CD 11/3.

Benedictine Fathers, Inc., Elkhorn, Neb. rejected bids Nov. 5, SEMINARY and MONASTERY, ELKHORN, NEB. LB $918,890. CD 11/17, under LB.

▲† **Dondlinger & Sons Constr. Co.,** 1206 E. Lincoln St., Wichita, Kan. CA $2,158,262. BARRACKS, grading, seeding, sodding, Inv. 23-028-55-17, FORT RILEY, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Oct. 25. CD 10/6.

▲ **Dreier & Son Constr. Co.,** 1123 Quindaro St., Kansas City, Kan. CA $1,010,876. general contract Argentine HIGH SCHOOL, KANSAS CITY, KAN. Bd. Educ., Library Bldg., Kansas City, Kan. CD 11/4, under LB.

▲ **J. C. Dossey Co. and Jack Stewart & Son Constr. Co.,** 30 and Burlingame Sts., Topeka, Kan. Owner Builds. $2,000,000. 206 RESIDENCES, TOPEKA, KAN.

Marshall Constr. Co., 4009 Center St., Houston, Tex., LB $617,200, Clara Road Negro Elementary SCHOOL; Cypress SCHOOL addn., SHOP, sewage disposal sys., CAFETERIA, misc. CLASSROOMS, CYPRESS-FAIRBANKS, TEX. Cypress-Fairbanks Independent School Dist., Peerless and Thomas Sts., Houston, Tex. Lloyd & Morgan, 4605 Montrose St., Houston, Tex. archts. Walter P. Moore, 2 Pinedale St., I. A. Naman, 3305 Montrose St., Houston, Tex. engrs. Bids Nov. 15.

▲ **The Fluor Corp. Ltd.,** M. Esperson Bldg., Houston, Tex., CA $28,000,000. butadine and alkylization PLANT; CA $395,500, WAREHOUSING or STORAGE; CA $285,000, MACHINE REPAIR SHOP UNIT, near Settegast, HOUSTON, TEX. Grand total $28,680,500. Texas Butadine & Chemical Corp., Dr. Robert L. Purvin, pres., Reserve Loan Life Bldg., Dallas, Tex. CD 7/14 and 10/28.

▲ **Jim West Building Co.,** 226 Winkler St., Houston, Tex. CA $312,500, 22 DWELLINGS; CA $336,118, 35 DWELLINGS; CA $347,175, 29 DWELLINGS; CA $339,000, 26 DWELLINGS, HOUSTON, TEX. Grand total $1,334,793. Don Kelso, 226 Winkler St., Houston, Tex. CD 11/8.

▲ **Jim West Building Co.,** 226 Winkler St., Houston, Tex. CA $343,000, 29 DWELLINGS; CA $331,160, 25 DWELLINGS; CA $355,190, 33 DWELLINGS, HOUSTON, TEX. Grand total $1,029,350. John Robbins, 3610 Hastings St., Houston, Tex. CD 11/8.

FAR WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **J. W. Bateson Co.,** Irwin Keasler Bldg., Dallas, Tex., LB, $850,772, est. $955,986. multipurpose wing hangars, 2 aprons and connecting taxiways, roads, parking areas and utilities, Larson Air Force Base, ENG-45-164-55-10, MOSES LAKE, WASH. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Nov. 16. CD 10/13.

Webb & White, 7220½ Melrose Ave., Los Angeles, Calif., CA, $855,467, Proj. 21, Artesia-Norwalk Storm Drains, Lines C and D, Long Beach, LOS ANGELES, CALIF. Los Angeles Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids Nov. 5, awarded Nov. 16. CD 11/18, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Halvorson Constr. Co.,** 20054 Pacific Hy. S., Seattle, Wash., CA, $1,311,417, general contract Shoreline HIGH SCHOOL, SEATTLE, WASH. Shoreline School Dist., E. 158 St. and 20 Ave. N. E., Seattle, Wash. Bids Nov. 4. CD 11/9, under LB.

Leonard Homes, Inc., 15037 1 Ave. S., Seattle, Wash., Day Labor, $323,910 30 HOUSES, 14 Ave. S. and 200 St., SEATTLE, WASH.

▲ **Albertson Bldg. Co.,** 18331 Greeley Rd., Artesia, Calif., CA, $1,074,000, 104 frame, stucco DWELLINGS, Laura and Euclid Sts., ANAHEIM, CALIF. Claredge Homes, 1425 Mission St., South Pasadena, Calif.

Langendorf Bakery Co., c/o Bennett & Bennett, engrs., 1165 E. Colorado St., Pasadena, Calif., rejected bids Oct. 27, BAKERY PLANT, BELL GARDENS, CALIF. LB $903,680. New Bids Nov. 19. CD 11/9, under LB.

Len Constr. Co., 8302 W. 3 St., Los Angeles, Calif. Owner Builds. $531,202, seven 12-unit APARTMENTS, San Anselme Ave., LONG BEACH, CALIF.

CANADA

BIDS ASKED—BUILDINGS

Que., St. John's—BARRACK BLOCKS—BA 12/16—Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. 2 barrack blocks at Military School $700,000. Plans deposit $100. CD 11/11/52.

▲ **Ont., Petawawa**—GARAGES, etc.—BA 12/21—Defence Constr. Ltd., 56 Lyon St., Ottawa, three 40-vehicle unit garages and POL Station, Army Station. $1,100,000. Plans deposit $100.

▲ **Que., Montreal**—APARTMENTS—Bids Asked—Harvey Maron, 5050 Pie IX Blvd., seven 12-suites each APARTMENTS, 44 Ave. at Rosemont St. $2,100,000. R. Fisher, 3177 St. Sulpice Rd., archt.

(Continued on page 75)

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SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

(Continued from page 73)

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Diamond Constr. Co.**, 60 Carleton St., Fredericton, N. B., CA $1,217,680;
Modern Constr. Co., Ltd., Salisbury Rd., Moncton, N. B. CA $414,785;
Byers Constr. Co. Ltd., 5675 Western Ave., Montreal, Que., CA $344,435;
Caldwell & Ross, Fredericton, N. B., CA $326,927.
Cameron Contg. Ltd., 77 Upper Water St., Halifax, N. S., CA $261,908.
Terminal Constr. Co. Ltd., Dominion Sq. Bldg., Montreal, Que., CA $155,471;
Rex. K. Chappell, 68 Havelock St., Amherst, N. S., CA $138,896;
Wellington Constr. Co., Sherbrooke, Que., CA $121,175;
F. W. McMulkin, Upper Gagetown, N. B., CA $110,660;
Atlas Constr. Co. Ltd., 4781 St. Catherine St. W., Montreal, Que., CA $261,500.
B. E. Hoyt Constr. Co., Hoyt, N. B., CA $88,854, for clearing, grubbing, burning various sections of No. 2. Training Area of Canadian Army Camp, FREDERICTON, N. B. Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. Grand total $3,442,291. Awarded Nov. 15. CD 8/1/52, under Public Buildings.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Rush & Tompkins, Ltd.**, 10023 103 St., Edmonton, Alta., LB., $2,339,500,
Semley Electric Co., 11505 105 Ave., Edmonton, Alta., LB, $303.742, electrical work, 10 story, wedge shaped, CITY HALL, south of railway station, EDMONTON, ALTA. City, Civic Bldg., Edmonton, Alta. Bids Nov. 17.

▲ **Canadian Kellogg Ltd.**, 194 Bloor St. W., Toronto, Ont., CA, $1,500,000, power and equipment foundation for thermal CRACKING UNIT, DAWSON CREEK, B. C. Excelsior Refineries Ltd., Edmonton, Alta.

Bennett & White Constr. Co. Ltd., 660 Howe St., Vancouver, B. C., LB, $531,599, 1 and 2 story, frame Junior HIGH SCHOOL, NORTH VANCOUVER, B. C. School District No. 44, North Vancouver, B. C. Bids Nov. 15. CD 10/29.

▲ **Earl & Harpell**, R. R. 3, Kingston, Ont., CA $1,000,000. remodeling HOTEL and constr. MOTEL, KINGSTON, ONT. British American Hotel Ltd., Kingston, Ont. CD 1/20.

▲ **A. Robertson Ltd.**, 5035 Western Ave., Montreal, Que., CA, $1,000,000. fireproofing and renovation of Parliamentary LIBRARY, OTTAWA, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. CD 12/16/53.

M. Sullivan & Son Ltd., 234 Elgin St., Arnprior, Ont., CA, $619,347, FOREST EXPERIMENTAL STATION, Army Camp, PETAWAWA, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Nov. 17. CD 10/25.

Rice Constr. Co., 1720 Keele St., Toronto, Ont., Owner Builds, $425,000, 45-suite APARTMENT, 1720 Keele St., TORONTO, ONT. Jackson & Ypes, 5453½ Yonge St., Toronto, Ont., archts.

Richard & B. A. Ryan Ltd., 78 Logan Ave., Toronto, Ont., CA $850,000. 2 story STORAGE and OFFICE, Queensway and Plywood Pl., TORONTO, ONT. Ayer Storage Ltd., 690 St. Paul St. W., Montreal, Que. Awarded Nov. 17. CD 10/13.

W. B. Sullivan Constr. Ltd., O'Connor Post Office, Toronto, Ont., CA $533,971, municipal OFFICE, Yonge St., TORONTO, ONT. North York Twp., 5145 Yonge St., Toronto, Ont. Bids Nov. 15. CD 11/22.

Hercule Development Reg'd, 8960 Bessborough Ave., Montreal, Que., Owner Builds, $625,000 HOUSING program, incl. 50 bungalows, Trudeau and Gillmore Sts., CHATEUGUAY HEIGHTS, QUE. Shorey, Ritchie & Douglas, 4147 Sherbrooke St. W., Montreal, Que., archts.

Deschamps & Belanger Ltee, 6931 Cote de Neiges Rd., Montreal, Que., CA $585,000, CHURCH, PRESBYTERY, Park Ave., MONTREAL, QUE. La Fabrique de la Paroisse de Notre Dame de la Labette, c/o P. Goyer, archt., 256 Pine Ave., Montreal, Que.

J. L. E. Price & Co. Ltd., 4664 St. Catherine St. W., Montreal, Que., LB, $800,000, 1 story, 225x438 ft. superstructure for TOOLING BLDG., MONTREAL, QUE. Canadiar Ltd., Montee St., Lawrence, Montreal, Que. CD 4/27/53.

F. H. McGraw Co., Ltd., 1520 Mountain St., Montreal, Que., CA $937,960, 190,000 sq. ft., concrete, steel, brick, PLANT addn., Cote de Liesse Rd., ST. LAURENT, QUE. Shipping Containers Ltd., 155 W. Beaubien St., Montreal, Que. Bids June 21. CD 6/16.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† **Alaska, Fort Richardson**—BA 12/15—U. S. Eng., Anchorage, rein.-con. addn. to sewage lift station with alterations to existing plant, ENG-95-507-55-36. Plans deposit $20. CD 11/25/52, under Public Buildings.

LATIN AMERICA

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Venezuela, Palmarajo**—PIPE LINE—Bids Asked—Compania Shell DeVenezuela, Palmarajo, 45 mi. crude line (18 mi. 16 in. welded joint under water and 27 mi. 24 in. on dry land surface) running from West Shores of Lake Maracaibo to Terminal at Palmarajo. $2,985,000.

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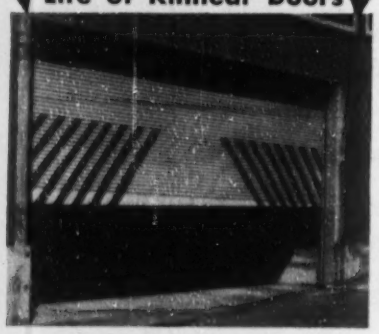

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KINNEAR ROLLING DOORS
Saving Ways in Doorways

UNIT PRICES

Big Spread in Labor Bids To Lay Texas Water Line

The contract for a 36-in. water line from well fields at Canutillo, Texas, 9 mi towards El Paso is divided into $599,585 for materials, $137,454 for labor. El Paso Municipal Water & Sewer Department is the owner.

The lump sum materials contract is 0.4% under second-low bid. United Concrete Pipe Corp. provides 46,300 ft of steel cylinder concrete pipe, including all tees, crosses and other fittings, and installs a pipe plant in El Paso.

Low bids on installation are a big 30% apart. On five items second bidder went more than 400% above the price by successful contractor T. N. O'Kelley of El Paso. Eight bidders' deductions for delivered pipe vary between $3,000 and $39,000.

Wages range from $2.50 per hour for skilled labor to $1.00 for common labor.

Installation bids include:

1C T. N. O'Kelley, El Paso, Tex	$137,454
2 Clyde Yarborough Inc., Odessa, Tex	197,626
6 Engineering Limited Pipeline Co., El Cerrito, Calif.	339,845

Bids: 10-12-54 Item	Unit	Quantity	Unit Prices 1C	 2
Unload, haul, install				
36" stl cyl conc P, incl ditchg, bends, flanged outlets	lf	46,300	$1.87	$2.72
36" horiz gate vlv, incl exc bevl gr w by-pass	ea	10	54.00	325.00
12" GV w flng plate	ea	29	34.00	30.00
Tees, 36x36x12" hub-hub-flange	ea	25	54.00	330.00
Cross 36x36x12x12" hub-hub-flng-flng	ea	2	68.00	375.00
Air vlv assembly	ea	5	29.00	25.00
Extra dpth P addnl exc	lf-vf	3,000	0.15	0.25
MH cone "A" 0-5' f&i	ea	5	375.00	375.00
"B" 0-8' f&i	ea	10	1,188	1,600
ex dpth "A"	vf	20	65.00	29.00
"B"	vf	10	150.00	97.00
Cone "A" misc, f&i	cy	150	54.00	70.00
"B" f&i incl exc, shoring, dewater	cy	1,000	19.00	20.00
Prev soil electrolysis, rem clay from P, subgr & bkfl	lf	3,000	1.07	1.75
ROW markers, conc, f&i	ea	72	5.57	35.00

Deduction for delivered pipe, not incl in contract price
1C ..... $3,000 2 ..... $17,440

Low River Diversion Price On New Mexico Dam

The Bureau of Reclamation at Albuquerque, New Mexico, opened 18 bids on Sept. 9 for the $273,510 rehabilitation of Isleta Diversion Dam. More than double the difference between high and low bids is the $122,000 spread in lump sum prices to divert and care for the river during construction and unwatering foundation.

D. D. Skousen & Son dipped 14% below the $326,930 engineer's estimate, only 1% and $3,115 under second-low. The Skousen bid on river diversion was $13,800, lowest of 18. Second bidder asked $46,000 more; highest price was $136,000.

Isleta Dam is a flattened "V" with the apex upstream. It consists of 30 gates each 20 by 5 ft. Bearing piles are under piers between the gates. Sheet piling is at both the upstream and downstream edge of the concrete base slab. Irrigation water flows to either side of the river.

This year's floods partially undermined and badly damaged the dam. To stabilize it, the contractor will drive a line of sheet piling parallel to and 40 ft upstream from the edge of the floor. A new concrete apron and floor will tie the new piling to the old structure. All gates will be built and sealed anew. Riprap will provide protection both up and downstream, and grouting will fill all voids beneath the dam.

Construction started Oct. 4, is due for completion Mar. 27, 1956. The contractor must plan his work to avoid trouble from high flows which occur during spring runoff.

Skilled labor rates are $2.60 per hour, semi-skilled $1.95, common $1.50.

Rubber waterstop material is furnished by the government.

Bidders include:

1C D. D. Skousen & Son, Albuquerque, N. M.	$273,510
2 List & Clark Constr. Co., Kansas City, Mo.	276,625
18 J. H. Ryan & Son Inc., Albuquerque, N. M.	486,343
EE Bureau of Reclamation, Albuquerque, N. M.	326,930

Bids: 9-9-54 Item	Unit	Quantity	Unit Prices 1C	 2
Div & care river dur constr & unwatr fndn	ls	1	$13,800	$60,000
Excavation	cy	15,200	0.90	0.70
Backfill	cy	1,400	1.00	0.50
Pit-run grav surfacing	cy	150	1.50	3.50
Riprap	cy	5,390	6.00	4.00
grav bed	cy	870	4.00	3.00
Grout holes, drill & fill	lf	410	5.00	2.00
first 6,000 cf	cf	6,000	2.00	0.60
over 6,000 cf	cf	6,000	1.00	0.50
Drill 630 1" hl in exist sheet piling	ls	1	1,100	400.00
Rem exist conc & dispose	cy	30	20.00	25.00
unsound or surf und 1"	sy	630	5.00	1.50
Conc, dam overfl section	cy	320	50.00	45.00
apron	cy	730	42.00	45.00
operating bridge	cy	40	65.00	50.00
Cmt, f&h 1st 2100 bbl	bbl	2,100	6.00	6.50
over 2100 bbl	bbl	2,100	5.00	5.00
Reinf bar, f&p	lb	134,500	0.11	0.14
Elastic fill matl in jt	sf	2,350	1.75	1.75
Rubbr watrstops, jt,"A",p	lf	2,350	0.50	0.75
Spec #7 dowel bars, f&p	DB	300	10.00	6.75
#4	DB	370	8.00	4.70
Jt space fill, bri abuts	ls	1	100.00	125.00
Drill & anchr, dowel & reinf bars	lf	510	3.00	1.30
Raise oper deck of dam	ls	1	4,000	3,000
Timber rail, f&erect	ls	1	650.00	250.00
Stl sht piling, f&drive	lb	440,500	0.13	0.105
cut exist	lf	375	2.50	1.00
Rehab insp cov plates	ls	1	800.00	100.00
handrail	ls	1	1,200	500.00
Radial gates:				
Rivr, rehab 30	ls	1	14,000	14,200
reloc pin bearings	PB	3	500.00	40.00
30 sills, f&i	ls	1	1,500	1,800
Sluice, rehab 2	ls	1	1,000	1,200
2 sills, f&i	ls	1	800.00	620.00

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You'll get important two-way protection—and, chances are, save both time and money—when you coat fabricated structural shapes with Pittsburgh's new X-L-O Primer. This unusual product safeguards them against corrosion during transit and erection and reduces risk of surface failures that necessitate premature cleaning and painting.

X-L-O Primer is made with *extracted* linseed oil surpassing Federal specifications. This special oil provides such unusual "wetting" characteristics that surface irregularities caused by mill scale are coated uniformly. This oil also causes such thorough and rapid drying that fabricated shapes can be shipped within 24 hours after coating, in any season.

Besides preventing corrosion in shipment and erection, X-L-O Primer serves as an excellent foundation for field painting. It is available in combination of red lead and iron oxide, or can be supplied with 100% red lead, if desired. Pittsburgh's IRONHIDE or METALHIDE can be used as finishing coats.

For additional information—write, phone or wire Pittsburgh Plate Glass Company, Industrial Sales Division, Gateway Center, Pittsburgh, Pa. Or call the nearest factory listed at the left.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N.J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Torrance, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. Thresher Paint & Varnish Division, Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

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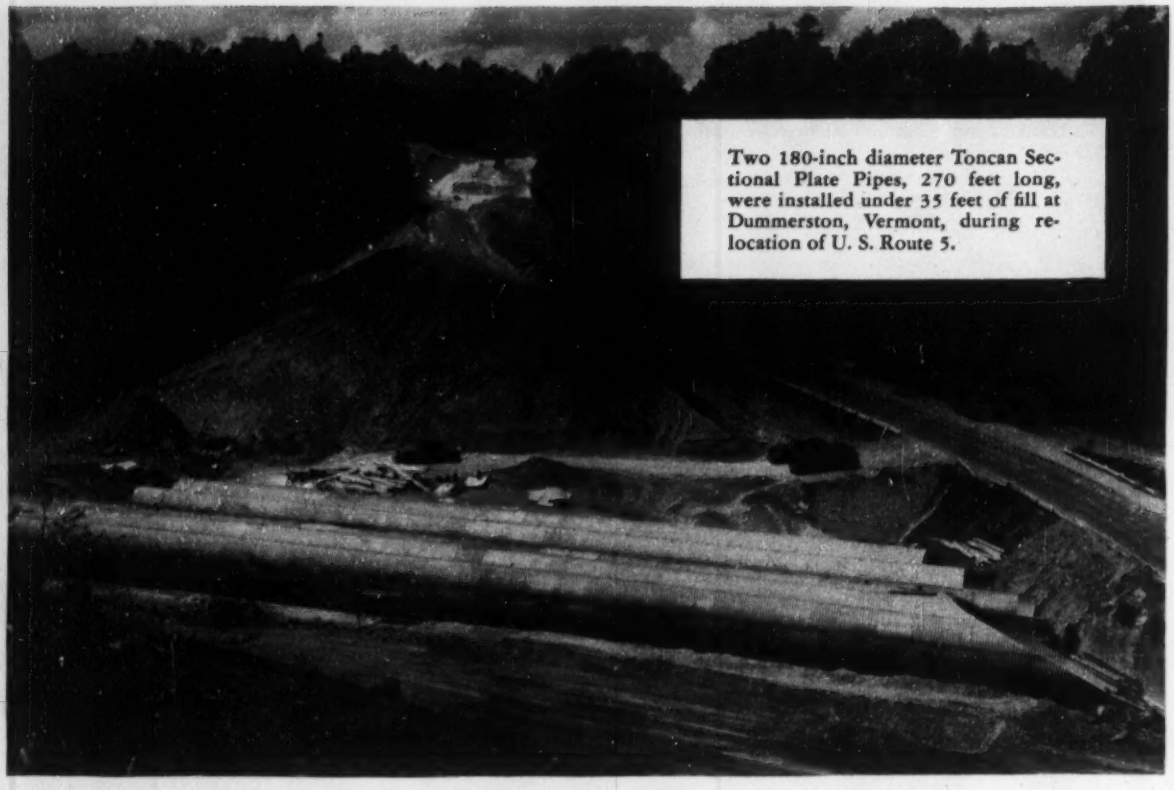

Two 180-inch diameter Toncan Sectional Plate Pipes, 270 feet long, were installed under 35 feet of fill at Dummerston, Vermont, during relocation of U. S. Route 5.

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Economical • Easily Installed • Last for Years

Even big jobs like this Toncan Sectional Plate Pipe installation are easy to handle . . . easy to erect in any weather with unskilled labor.

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Once in place, you can forget about Toncan Sectional Plate Structures. They flex with shifts in subsoil and fills, maintain their original water-carrying capacity, do not spall.

Toncan Sectional Plate Structures give you years of trouble-free service because they are made of Republic Toncan Iron . . . containing twice as much copper as ordinary copper-bearing steels and irons plus just the right amount of molybdenum to make the copper most effective in resisting rust.

Get "specs" and data from a Toncan Drainage Products Manufacturer listed below. Or write to

REPUBLIC STEEL CORPORATION

GENERAL OFFICES • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, N. Y.

Toncan Drainage Products Made From Republic Toncan Iron or Republic Copper Steel include

Corrugated Metal Pipe • Perforated Corrugated Metal Pipe • Sectional Plate Pipe • Sectional Plate Arches • Corrugated Metal Arch-Pipe • Sectional Plate Arch-Pipe • CorWel Subdrainage Pipe • Asphalt Coated Pipe • Asphalt Coated and Paved Pipe.

Manufacturers of Toncan Drainage Products

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THE BOARDMAN CO.
OKLAHOMA CITY, OKLA.
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BLUEGRASS PIPE & CULVERT CO.
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CENTRAL CULVERT CORPORATION
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Prudential Sells Pike Bonds, Cashes a Tidy Capital Gain

Heads-I-win, tails-you-lose feature of bonds is probable reason why insurance firm decided to reinvest its money

One of the big original investors in the New Jersey Turnpike last week cashed in on its profits. Prudential Insurance Co., the nation's No. 2 life insurance carrier, sold at a public offering the $75 million of Turnpike 3¼s which it bought privately at par back in 1950.

A group of underwriters headed by the Wall Street investment house of Smith, Barney, which originally placed the $220-million issue, offered the bonds at 106¾. The actual price they paid Pru wasn't revealed. But it must have provided a tidy capital gain for the insurance company. And it releases a big chunk of cash which is available for reinvestment in new Turnpike bonds.

The probable reason for Pru's move is this: Starting in 1960, the issuer can buy back these bonds at 103—the "call" privilege included in most bond issues. In other words, if bond-market conditions are sufficiently better in 1960 than they were in 1950, the Turnpike Commission can buy the bonds back at 103 and replace them with bonds at a lower interest cost. On the other hand, if interest rates are up in the 1960s, the borrower can stand pat, while the bondholders have bonds which have declined in price.

• **Heads I win**—This heads-I-win, tails-you-lose- feature puts a limit on the price of the bonds. They can't go much higher in price, no matter how favorable bond market conditions become, because if the bond market is easy in the 1960s, the bonds are quite likely to be called.

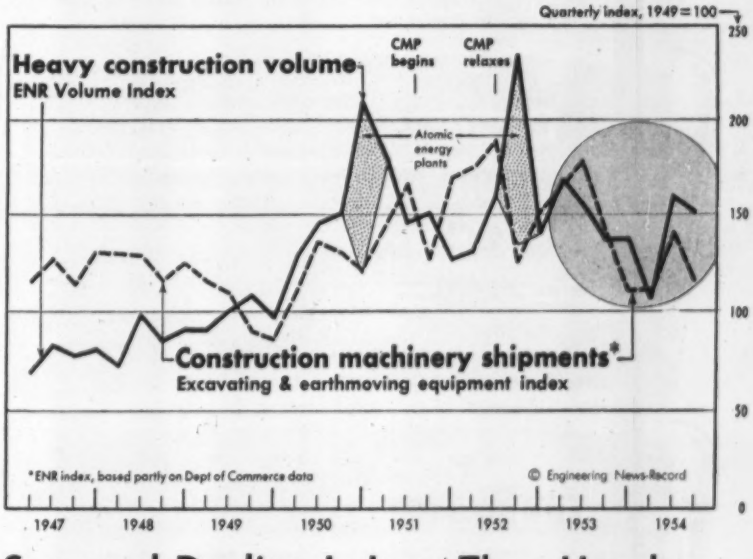
So how can these bonds be sold at 106¾? The answer to that is that in the bond market one investor's poison is another investor's meat. The Prudential is a life insurance company, interested in getting the longest-term investments possible, with definitely known yields. When it bought the Turnpike bonds in 1950, it was possible that they would not be completely retired until 1986. Now, because of the great financial success of the Jersey Turnpike, and assuming that bond-market conditions in the 1960s will be about as easy as they are today, it seems quite possible that Pru cannot count on these investments, starting in with the call date of Jan. 1, 1960.

• **Somebody else's dish**—Instead of long-term bonds, they may be five-year bonds. And at the sale price of 106¾, the yield to call date is about 2.39%. There are plenty of investors interested in a tax-exempt yield of that kind, investors who have money they don't want to tie up for long periods. Commercial banks, savings banks, property-insurance companies are all possible customers. That's one of the things that make the bond market; and that's one reason why huge volumes of money are available for construction.

• **Oklahoma turnpikes**—Meanwhile, financing plans for new turnpikes are picking up steam again, after several weeks' lull. First big financing on the docket is next week's $214-million offering by the Oklahoma Turnpike Authority. If successful, bids will be out in the spring and construction will start in June.

This offering is actually three separate bond issues financing three separate tunpikes, of unequal income possibilities. Total mileage is 302. The Northeasten Turnpike will run 88 mi from near Tulsa to the Missouri state line near Joplin. This financing will be for $68 million. The Southwestern Turnpike, 127 mi and $83 million, will go from near Oklahoma City to the

(Continued on page 80)



Seasonal Decline Is Less Than Usual

Shipments of excavating and earthmoving equipment during the third quarter continued to run lower than a year ago (chart, above). ENR's physical-volume index shows a seasonal decline from the second quarter. But this seasonal drop was less than in the same periods of the past three years.

Furthermore, in terms of physical volume the gap between 1953 and 1954 continued to close. The index of third-quarter shipments was only 16% behind a year ago, while second-quarter shipments were off 21% and first quarter shipments were down 33%.

ENR's volume index of contract awards, continues to stay well above the equipment index, indicating that equipment sales should stay at a high level.

Road construction and maintenance machinery was the only category with higher physical volume of shipments in the third quarter than a year ago. For the first nine months, physical volume in this category and in the category of machinery for mounting on tractors (mainly bulldozers) is holding up best. The former is off only 7% and the latter 9%.

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BUSINESS AND FINANCE

Texas line near Wichita Falls. The Northern Turnpike will cost $63 million, and will run 97 mi from the end of the Turner Turnpike near Oklahoma City to the Kansas line near Wichita. The northern 16 mi of this project are planned, tentatively, to be two-lane unless sufficient contingency funds are available to make it four-lane.

The State Turnpike Authority says it will advertise for bids on both asphaltic concrete and Portland cement paving, designed to sustain axle loads of 28,800 lb and up.

• **Illinois financing**—An even bigger financing is scheduled for about the turn of the year, when the Illinois Turnpike Authority will offer about $390 million of bonds to pay for construction of 191 mi of toll highways around Chicago and in northern Illinois. About 277 mi of downstate routes have been postponed.

The routes are: (1) a beltline around Chicago from a point near the Indiana line to the Wisconsin border. (2) A pike from the Chicago beltline to Rockford and then north to the Wisconsin line near Beloit. (3) A pike from the beltline to Aurora.

• **More for Thruway**—Along with next week's Oklahoma financing comes a $50-million chunk of revenue bonds continuing the money-raising program for the 562-mi New York State Thruway. So far, the Authority has sold $250 million of state-guaranteed bonds and $300 million of revenue bonds. The main line of the Thruway is now open from Buffalo to Newburgh, and another connecting 30-mi section as far as Suffern will open soon. The main line will extend to New York City by the end of 1955. Connecting spurs to the New Jersey Turnpike, the Connecticut Expressway, the Pennsylvania Turnpike Northwestern Extension, and Canada's Queens Highway will be ready by 1957. Soon after, there will be a connection with the Massachusetts Turnpike.

More Hotel Construction

Sheraton Corp., of Boston, will spend $100 million on hotel construction over the next six years. Specific outlays include: $15 million for the new Penn-Sheraton in Philadelphia, $5 million for a new hotel in New Haven, a $10-million addition to the Sheraton-Belvedere in Baltimore, and an addition to the Chicago Sheraton.

(*B&F continued on page 83*)

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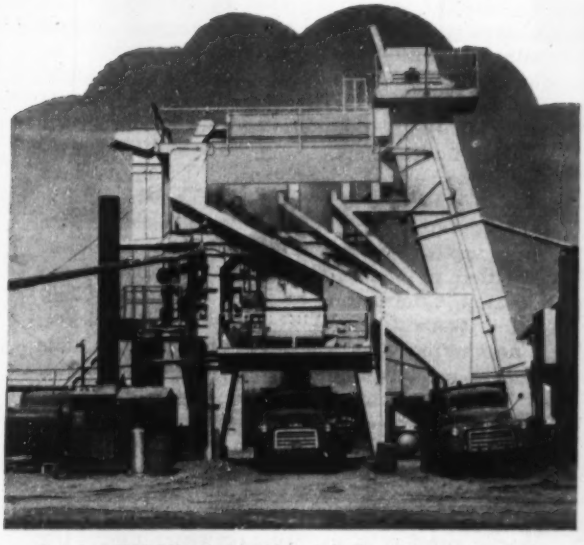

Here is a MADSEN Model 481 Asphalt Plant in operation for a mid-west contractor. Note the clean, efficient appearance of the plant...the operator platform on the end of the plant away from heat and dust...the combination overflow and reject bin mounted on the side of the plant for easy accessibility.

You may be certain what your asphalt plant requirements are **today,** but what about next year or 5 years from now? The chances are you will want to increase your production capacity as the years go by . . . and MADSEN engineers have taken this important point into consideration in designing the outstanding MADSEN Model 481 Asphalt Plant. You can purchase the Model 481 as a 4000-lb. Plant and, with only minor modifications, and at very little cost, you can convert this plant into a 5000-lb. or 6000-lb. plant at a later date. Basically, the Model 481 is a 6000-lb. plant, being oversize throughout including larger elevator, screen, bins, weigh-box, mixer and drives. Take advantage of this in-built MADSEN versatility, and buy the MADSEN Model 481 — the asphalt plant that lets you increase production up to 50%.

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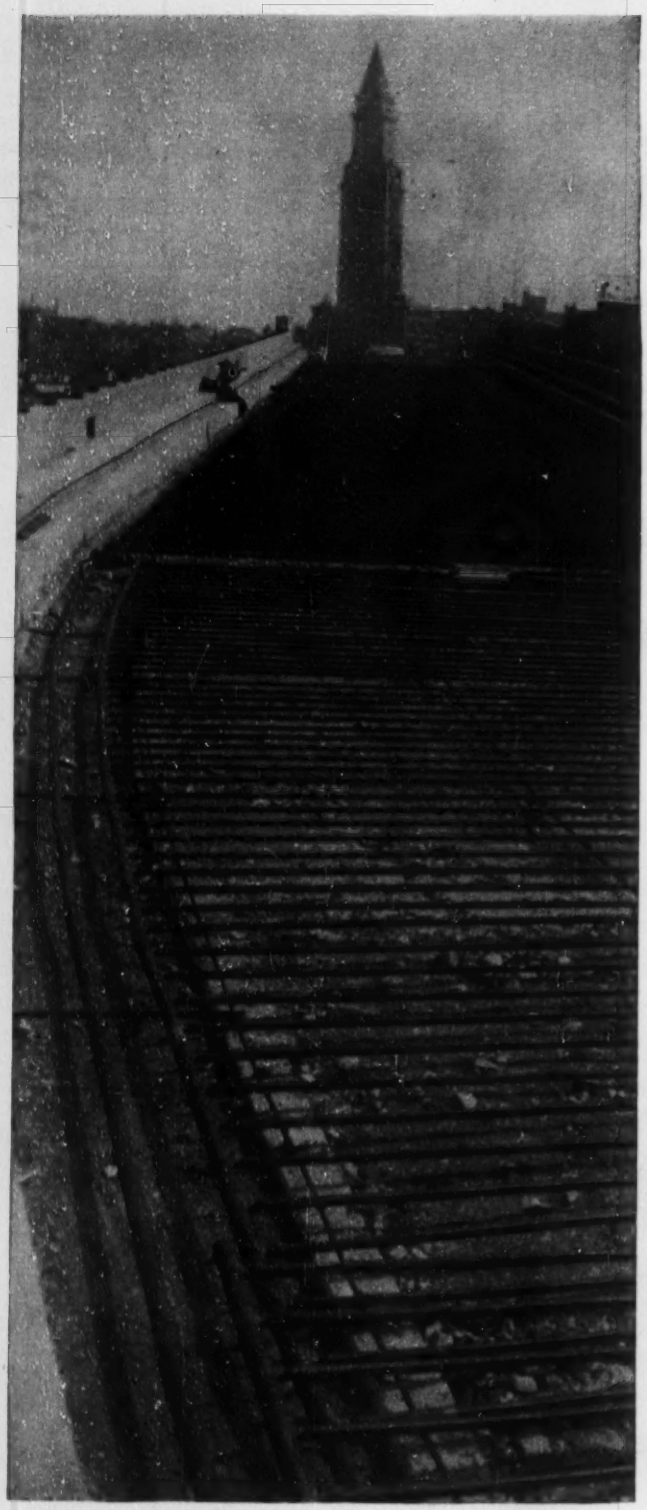

World's Largest Snow Melting System Uses Wrought Iron Pipe

More than 200 tons of corrosion-resistant wrought iron pipe forms snow melting grids on sixteen ramps serving Boston's 200-million dollar Aerial Highway

When completed, the access ramps leading to Boston's Aerial Highway will be the modern answer to the winter motorists' dream.

Heated by coils of wrought iron pipe, these pavement ramps will provide a dry road surface in blustery cold weather months to protect the motorists from dangerous skidding hazards and the driving threat of winter traffic jams.

More than 200 tons of wrought iron pipe, selected because of its ability to resist corrosion and vibration, and its ease of installation, are arranged in series and buried in the concrete. To operate, steam supplied by Boston Edison Company, is fed to heat exchangers. Water mixed with Ethylene-Glycol anti-freeze, is circulated through the heat exchangers and wrought iron pipe network. The heated pavement melts snow as it falls, prevents ice from forming.

This modern expressway, designed by Architects-Engineers Fay, Spofford & Thorndike and the Commonwealth of Massachusetts Bridge Department, again reflects Boston's leadership in adapting snow melting systems to winter weather problems. The Merrill Company were Heating Contractors, and the V. Barletta Company were General Contractors. The Jarvis Engineering Company fabricated all pipe coils for the snow melting system.

Wrought iron pipe is establishing durability records in snow melting systems under sidewalks, store entrances, factory platforms, garages, hangers, and other surfaces where snow and ice create safety and production hazards. For complete details, write for our bulletin, WROUGHT IRON PIPE FOR SNOW MELTING SYSTEMS.

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Better Figures

Commerce Dept. confers with industry spokesmen

Department of Commerce reported progress in developing more reliable statistics for the construction industry in a meeting last week attended by 34 representatives of building material and construction companies and their trade associations.

Walter W. Schneider, chief of construction statistics of the Business and Defense Services Administration, said that for the first time the Bureau of the Census is collecting data for the program. Pilot surveys, he noted, had shown the need for obtaining statistics and information from primary sources rather than from secondary ones, especially for small new construction and "fix-up" work. Under the old system of having to get information from secondary sources, Schneider said, the low estimates raised questions as to where all the building materials went. It had been estimated that major residential improvement activities had totaled about $1 billion a year, yet a pilot survey by the Census Bureau revealed that the figure should be at least $3 billion a year.

Schneider explained that BDSA's Building Materials and Construction Division expects to develop a five-point program to obtain badly needed statistics on construction activity. Objectives are to:

1. Improve new construction activity estimates by getting more information from primary sources. He estimated that about 35% of present new construction figures are unfortunately of uncertain value.

2. Collect information on "fix-up" expenditures by direct field surveys.

3. Conduct semi-annual surveys of vacancies in metropolitan areas to keep check on the housing market.

4. Measure the production volume of all kinds of materials used in construction, on which current information is relatively vague. It would show what portion of annual production of each material goes into construction. Changes in annual totals would show trends in structural design.

5. Make a complete revision of the building materials production index to include items not used such as window glass, asphalt tile, aluminum products, etc.

An appropriation request for $1.1 million for this kind of program to beef up construction statistics was sent to Congress last year in a supplemental bill. It passed the Senate, but the House knocked it out. Right now, Commerce has another request for funds in the budget it is sending to the Budget Bureau—but it's not known whether the request that goes to Congress will be as large as the amount asked for last year.

Toll Roads and Free Roads: Delaware's Traffic Problem

The problem of what happens when a turnpike terminus pours traffic onto connecting free roads was pointed up last week. Col. William A. McWilliams, chief engineer of the Delaware State Highway Commission, recommended that the commission get authority to issue more Delaware Memorial Bridge revenue bonds to finance construction of approach highways.

He declared that under this plan the burden of financing a network of modern approaches to the bridge would be "shifted from the shoulders of the Delaware taxpayers to the bridge users." More tax funds then would be available to build other state roads.

Said McWilliams: The Delaware Memorial Bridge and the New Jersey Turnpike, both toll projects, "are imposing intolerable burdens upon the free roads of the State of Delaware. . . . The successful operation of a toll facility is dependent on a free flow of traffic. This is assured at the New Jersey entrance by a network of approach roads both free and toll . . . while on the Delaware side local free roads are congested and crowded beyond their capacity to serve. . . . All of which if allowed to continue will eventually result in lowered revenues for the bridge.

"We are being forced at this very moment to expend about $2 million of the taxpayers' money to expedite traffic on the western approach roads to the bridge."

At the same time, Col. McWilliams listed 527 mi of roads and bridges that need improvement, costing about $45 million.

Louisiana Goes Ahead With Bond Issue Voters Defeated

Although Louisiana voters turned down a proposed $50-million highway bond issue last month, Governor Robert F. Kennon is trying to get the bonds sold anyway.

The State Highway Board has just approved the issue. Next step is to start a test case asking the state courts to forbid the board from issuing the bonds. This court test would define the status of the Highway Department and whether it is entitled to sell bonds without voter approval.

One Cent of State Gas Tax Could Finance 1,000 Miles

One cent out of the present four cents per gallon Texas gasoline tax could support up to $200 million worth of 25-year highway bonds, according to James E. Taylor of the Texas Motor Transportation Assn. Taylor argues the Texas gas tax, which is one of the lowest in the U. S., need not be boosted because the new free superhighways would more than double gas tax revenue by 1970.

Says Taylor: "We have over 1,000 mi of highways in Texas carrying more than 4,000 vehicles a day. They should be four-lane, divided highways, engineers say. If we dedicated one cent of our present four cents gas tax toward retiring 2% highway modernization bonds, we could finance the building of 1,000 mi of four-lane freeways in Texas immediately. An increased revenue from motor fuel use and license fees would pay off the bonds—without new taxes and without tolls."

Each cent of the present gas tax now nets about $27.5 million a year. Taylor estimates that this figure would increase to $60 million by 1970, and that this would be enough to retire the bonds within 25 years.

Hafstad Leaves AEC to Advise Chase Bank on Atomic Power

Private industry is picking up more and more atomic experts. Last week, Lawrence R. Hafstad, director of the Atomic Energy Commission's Division of Reactor Development, resigned to join the staff of the Chase National Bank, New York. Hafstad will be a consultant on the peacetime uses of atomic energy.

Hafstad has headed the AEC Reactor Development Division since it was organized in 1949. Its function has been to work with private industry on private atomic power plants, and with the Department of Defense on military power plants.

Business Briefs . . .

• **Synthetic mica plant,** world's first, will be built in Caldwell, N. J. by Synthetic Mica Corp. The plant will produce about 1,000 tons a year of synthetic mica. Mica, a strategic material, is used as an electrical insulator.

• **Another merger**—Huber Mfg. Co., Marion (Ohio) manufacturer of road rollers, has acquired W. A. Riddell Corp., of Bucyrus. Riddell makes diesel-powered road graders and clay-working machinery.

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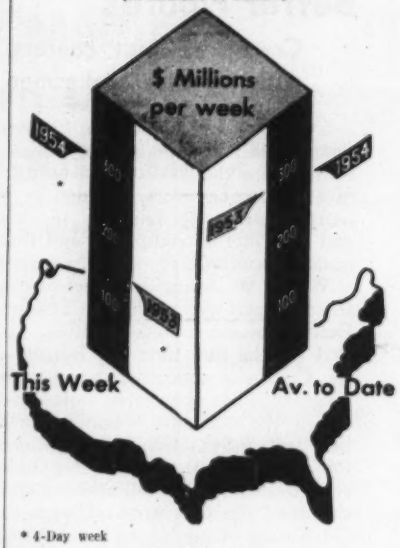
Activity This Week

As reported to ENR
(In millions of dollars)



* 4-Day week

Amount of contracts let

	This Week*	Cumulative 48 wks 1954	Cumulative 48 wks 1953	% chge
Federal	$22.2	$1,193.8	$1,341.2	−11
State and municipal	84.5	4,585.2	4,582.8	+0.1
Total public	106.7	5,779.0	5,924.0	−2
Total private	196.1	7,562.3	7,735.9	−2
U. S. total	$302.8	$13,341.3	$13,659.9	−2

Contracts by type of work

Waterworks	$3.0	$222.8	$214.0	+4
Sewerage	5.2	363.0	400.5	−9
Bridges	9.5	468.8	632.5	−26
Highways	31.3	1,760.8	1,646.2	+7
Earthwork, waterways	3.5	291.4	335.6	−13
Buildings:				
Public, excl. hsg.	32.6	1,625.8	1,577.0	+3
Housg., public	2.5	243.4	363.5	−33
Housg., private	76.7	3,945.4	3,224.8	+22
Commercial	53.7	1,325.5	1,066.9	+24
Industrial	61.6	1,763.4	2,609.3	−32
Unclassified	23.2	1,331.0	1,589.6	−16
Total	$302.8	$13,341.3	$13,659.9	−2

* 4-Day week

NOTE: Minimum size projects included are: Waterworks and waterways, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

New capital for construction

(millions of dollars)

	Week of Nov. 25 1954	Cumulative 47 Wks 1954	% chge '53-'54
Corporate securities	$11.8	$2,499.3	−34
State and municipal:			
All except housing	111.5	5,027.1	+30
Housing	...	91.0	−65
Federal loans	2.9	109.5	+2
Federal aid	...	673.0	−13
Total non-federal	$126.1	$8,399.9	−5
Federal appropriations:			
In U. S.	...	$2,073.3	+32
Outside U. S.	...	33.2	+15
Total new capital	$126.1	$10,506.4	+1

ENR cost and volume indexes, 1954

		Base years = 100 1913	1926	1949
Construction cost	11/25	643.09	309.13	134.81
	10/28†	643.02	309.10	134.80
Building cost	11/25	456.41	246.72	129.74
	10/28†	456.34	246.68	129.72
Volume	Oct.	423	172	122
	Sept.	503	204	145

† Official ENR monthly index for Nov.

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Plumbers Strike

Wages, termination date spur Kansas City fight despite Durkin's efforts

A 13-week-old plumbers strike in metropolitan Kansas City continued to smolder despite last week's "peace" meeting in Washington between AFL's Martin Durkin, Kansas City plumbing contractors, and Local No. 8 of the AFL plumbers union.

Failure to agree on an expiration date for a new contract and a deadlock on wage demands triggered the walk-out in September, and these issues have remained as stumbling blocks to settlement. Plumbers, traditionally fearful of winter slackness, have been adamant on an August termination date, while contractors insist on a switch to winter termination in line with many general trades in the industry. The union demands a 17½ cent raise and the contractors stand pat on a 12½ cent offer.

Full of bickering but void of violence, the strike has idled over 12,000 construction workers, halted many projects, and threatened stoppages at the $20-million Mid-Continent International Airport and the $22-million Sunflower Ordnance Works in Johnson County.

Hardest hit are carpenters and laborers. Truck drivers and metalworkers have suffered materially—bricklayers some. Many are working at other jobs in other lines and some have migrated elsewhere in search of work.

A co-striking union—AFL Pipefitters Local No. 533—moved off the field on Nov. 7, when it signed a separate agreement with the Heating, Piping, and Air-Conditioning Contractors Assn. Contract terms call for a 12½ cent wage increase, retroactive to Sept. 4, a yet undetermined expiration date to lie between Dec. 1, 1956 and March 1, 1957, and a 5-cent mileage rate beyond a 15-mi free zone in the five-county area.

This—coupled with individual agreements between Plumbers Local No. 8 and a few contractors—has eased the pinch on construction projects. Work on Hallmark Card's $8-million project, shut down for a month, has resumed—but without a full work force. Nearly half of some 3,000 homes under construction still lie idle. And the situation—which City Manager Cookingham originally estimated to be costing the local economy $800,000 a day—is expected to continue until the Plumbing Contractors Assn. gets together with the union.

Hope for an early settlement is pinned by some on the exchange of "a number of new ideas" at the Washington conference. Durkin's proposal for a termination date of June 1 with negotiations commencing the previous February is said to be acceptable to the union—if coupled with a 17½ cent increase. And the contractors reportedly were interested in the proposal of submitting to binding arbitration all future disputes—if presently coupled with a contract expiration date in December, January or February.

NLRB Approves Job Hunting As Part of Union Strategy

A National Labor Relations Board decision that Boeing Aircraft Co. of Seattle had unlawfully discharged one of its engineers for engaging in "legitimate" union activities is hailed as a victory by organized engineers across the country.

In a split decision, the board upheld the efforts of the discharged employe to facilitate mass resignations of fellow employes as an activity protected by the Taft-Hartley Law—as long as they were part of collective bargaining negotiations then in progress.

The dispute goes back to late 1952 when the aircraft company and Seattle Professional Engineering Employees Assn. (a member unit of Engineers and Scientists of America) started a rather subtle tug-of-war. Contract negotiations had commenced but soon failed to settle the matter.

The company was in a strategic position, partly because of an existing no-raiding agreement among members of the Aircraft Industries Assn. to which it belonged. To strengthen its own position, the union formed a committee, headed by company engineer Pearson, to organize a conference of employers of engineers—the purpose was to find jobs elsewhere to which union members could go or threaten to go.

The company reasoned it was not required to finance its own injury and fired Pearson.

In resolving the dispute, NLRB took a careful look at Taft-Hartley's Sec. 7 which permits employes to engage in "concerted activities for the purpose of collective bargaining or other mutual aid or protection."

The board's majority concluded that activities protected by the statute do not become unlawful just because

(*Continued on page 88*)

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INTERNATIONAL four-wheel-drive trucks bring to construction men and contractors entirely new 4x4 performance and efficiency. These new four-wheel-drive trucks combine famous INTERNATIONAL stamina, long life, and operating economy with everything that's new and best in 4x4 design.

A two-speed transfer case affords eight forward and two reverse speeds, permitting movement of men, tools, and equipment over all kinds of terrain. *Two transmission power take-off openings allow operation of front-mounted winch, hydraulic hoist, or other auxiliary equipment. There is provision for mounting a third power take-off on the transfer case.*

INTERNATIONAL 4x4 trucks have everything it takes for tough construction assignments, plus extra easy steering and handling, famous driver-designed Comfo-Vision cabs. Study the extra-value facts shown here, then get complete details from your INTERNATIONAL Dealer or Branch.

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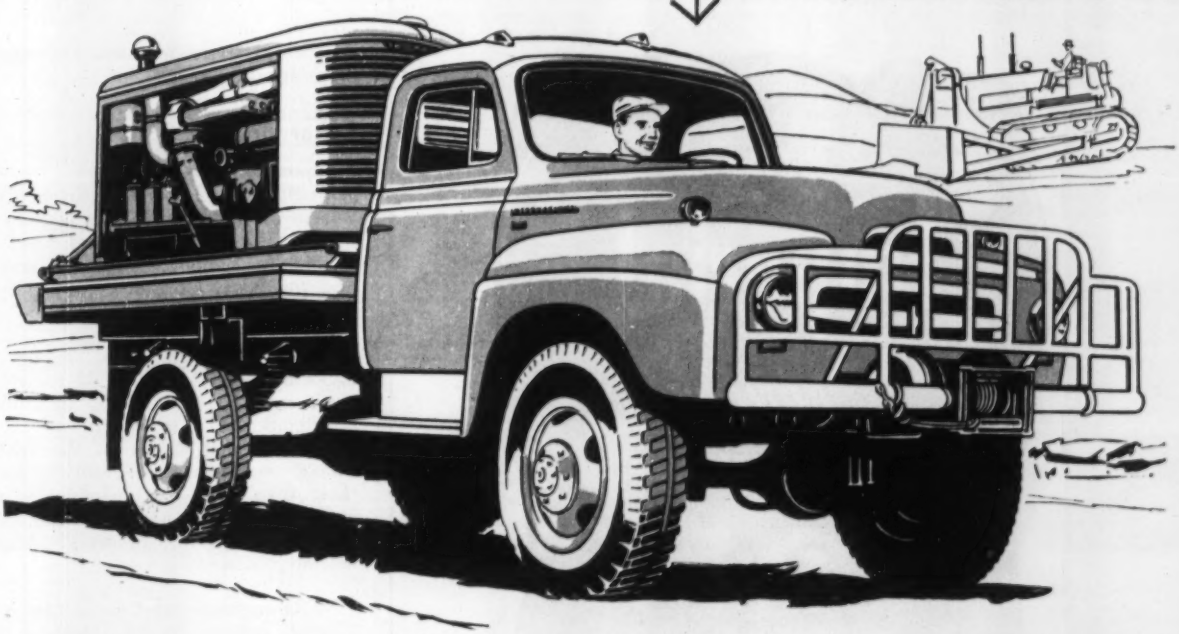
Two chassis models: Model R-140 (4x4), 130- and 142-inch wheelbases, GVW rating, 11,000 pounds. Model R-160 (4x4), 154- and 172-inch wheelbases, GVW rating, 15,000 pounds.

All-truck power: Both models powered by famous INTERNATIONAL Silver Diamond engines.

Transmission: Sliding gear selective type. Four speeds forward, one reverse. Power take-off openings on right and left sides.

Transfer case: Two-speed declutching type, providing eight forward and two reverse speeds, with manual disengagement of front axle for normal two-wheel-drive operation. Three-position shifting —high, 1.00 to 1; low, 1.87 to 1; and neutral. Provision for mounting full torque power take-off at rear of input shaft.

Four-wheel-drive INTERNATIONALS provide new standards of efficiency and stamina for a wide variety of construction jobs. Shown is an R-140 (4x4) with portable compressor mounted on flat-bed body.



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they are novel, or may subject the employer to substantial damage.

But a minority of two viewed Pearson's efforts as an attempt to destroy the employer's business. Such action, they said, disrupts industrial peace and security and becomes an illegitimate means to a legitimate end.

Who's Going to Plumb What?

Engineers and carpenters in Colorado are approaching a jurisdictional showdown. The Society of Engineers accuses the carpenters of edging in on the engineering profession and it intends to put a stop to it—by legal action, if necessary.

In Denver, the pot has been boiling for some time. Carpenters on some projects, says CSE in its monthly bulletin, won't build forms to lines and grades unless established by "card carrying" carpenters.

A union spokesman summed it up this way: "The engineers are not going to replace our carpenter foremen. We are not going to let junior engineers set lines on partitions, pilasters and so forth. They are not going to plumb our columns. That's our job."

CSE's reply: "We are moving in every direction to put a stop to this nonsense—and we are anxiously waiting for a carpenter to violate the engineer's registration law."

Labor Briefs . . .

• **Apprenticeship**—First step in reorganization of Labor Department's Bureau of Apprenticeship is appointment of Edward E. Goshen as deputy director for national industry promotion, and W. C. Christensen as deputy director for operations.

• **Federal contracts**—In Cincinnati, Labor Secretary Mitchell told the nation's carpenters that 20 building firms are "blacklisted" as violators of the Davis-Bacon Act and denied the right to bid on government contracts for three years. And in Philadelphia, a painting contractor was fined $500 for filing false payrolls for work under federal contract.

• **NLRB appointment**—Marcel Mallet-Provost, veteran NLRB attorney, is appointed assistant general counsel in charge of enforcing board orders in U. S. Court of Appeals.

• **Medical service**—A medical service plan covering an estimated 120,000 AFL union members in metropolitan Denver has been drafted by Denver's Trades & Labor Assembly.

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $1.80 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record 330 West 42nd Street New York 36, N. Y.

Bids: January 5, 1955

Sewage Treatment Plant

PRIMARY SEDIMENTATION TANKS 9 AND 10 AND INFLUENT CONDUITS DETROIT, MICHIGAN

Sealed proposals for the construction of Primary Sedimentation Tanks 9 and 10 and Influent Conduits for the Sewage Treatment Plant, at 9300 West Jefferson Avenue, will be received by the Board of Water Commissioners of the City of Detroit. Proposals shall be addressed to the Board of Water Commissioners, City of Detroit, Room 506, Water Board Building, 735 Randolph Street, Detroit 26, Michigan, and shall be endorsed "Proposal for Contract No. DWS-24". Proposals will be received until 2:00 P.M. Eastern Standard Time, January 5, 1955, at which time they will be opened and read aloud in the Board Room, Fifth Floor, Water Board Building, 735 Randolph Street, Detroit 26, Michigan.

Included in the work is the construction of an additional reinforced concrete primary sedimentation tank structure approximately 119 feet by 302 feet in plan and 15 feet in depth; twin 108-inch pre-cast reinforced concrete pipe conduit approximately 1070 feet long; reinforced concrete chambers, vaults and wells with brick masonry superstructures; and various drain lines and appurtenances. The tank structure, consisting of two tanks, the collecting channel and the pipe gallery will be supported on cast-in-place concrete and bearing piles, the base lengths of which are established as 68 linear feet with the total number required in excess of 1100. Excavation work included in this Contract will be to a level approximately 16 feet below existing grade. The work also includes the furnishing and installation of venturi meters, collecting and handling equipment for sludge and grease, pumps, hoppers, sluice gates, heating and ventilating system, plumbing, miscellaneous piping systems, electrical work, and all necessary appurtenances.

The Contract Documents, including the Notice to Bidders, the Forms of Proposal and Agreement, the Specifications, and the Contract Drawings may be examined during business hours, at the office of the Department of Water Supply, Room 706, Water Board Building, Detroit, Michigan. The Contract Documents may be obtained by making a deposit of Fifty Dollrs ($50.00) per set, which sum will be refunded upon the return of the complete Contract Documents in good condition within thirty (30) days after the bid date, or if used in making a bona fide proposal.

As security for the acceptance of the Contract, each proposal shall be accompanied by a certified check in an amount not less than four per cent (4%) of the total lump sum price bid, drawn payable to the City of Detroit, Board of Water Commissioners, or a satisfactory bid bond executed on the form provided in the Proposal which will hold and firmly bind the bidder and his surety unto the Corporation of the City of Detroit in the full amount of four per cent (4%) of the total lump sum price bid.

No proposal may be withdrawn for at least sixty (60) days after the scheduled closing time for receipt of bids.

The Board of Water Commissioners reserves the right to waive any informality in any bid and to accept any bid, or to reject any or all bids, should it deem it to be in the best interests of the City of Detroit to do so.

CITY OF DETROIT
BOARD OF WATER COMMISSIONERS
Alfred J. Simpson, President
Harvey A. Wagner, Vice-President
Oscar Wagner
George A. Shaffer
L. G. Lenhardt, Superintendent
General Manager and Chief Engineer
E. H. Bauer
Acting Secretary

Bids: December 17, 1954

Power Authority of The State of New York For Construction of Construction Power Facilities Near Massena, St. Lawrence County, New York

SPECIFICATION NO. PA-5-14036
ST. LAWRENCE CONTRACT NO. 7

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the construction of construction power facilities near Massena, St. Lawrence County, New York until 10:30 a.m. Eastern Standard Time on the 17th day of December, 1954 at the Authority's office, 270 Broadway, Room 1207A, New York 7, New York, at which time and place proposals will be publicly opened and read aloud.

The principal items of work are:

1. A 115 KV transmission line, 3-phase, single circuit, approximately 3 miles long on H-frame wood poles. The conductors will be No. 3/0 A.C.S.R. The line will also be provided with a static line which will be installed on top of one of the poles of the H-frame and strung the whole length of the line.
2. Approximately 3.7 miles of double circuit, 3-phase 13.8 KV transmission line on H-frame wood poles. The six conductors for this line will be 336,400 circular mil A.C.S.R.
3. A 115-13.8 KV substation consisting of erection of two 10,000 kva, 3-phase, oil-filled transformers, and necessary bus work, disconnecting switches and fuses for six 13.8 KV, 3-phase circuits. The structure to be furnished by the Contractor for this installation may be either wood or steel.
4. Two 13.8 KV load centers consisting of 3-3-pole, gang-operated pole top mounted load break switches and bus work arranged to receive two incoming 13.8 KV, 3-phase circuits. The structure will be wood.

Plans, specifications and Proposal Forms for the work are on file in the Authority's Office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and the Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, and may be inspected by prospective bidders during office hours.

Plans, specifications and Proposal Forms may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, after November 26, 1954 upon application and prepayment of a fee of Twenty-five ($25.00) dollars, no part of which will be refunded.

Bids must be made upon the proposal forms included in the Contract Documents. Each proposal must be accompanied by draft or certified check payable to the order of the Power Authority of the State of New York for the Sum of $15,000.00.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

U. S. Government

Sealed bids for furnishing labor, equipment, materials and performing all work required for site preparation, construction of substation, installation of all equipment and accessories, other related work, will be received in the office of the Engineering and Construction Director, Balboa Heights, Canal Zone, until 10:05 A.M. January 3, 1955, and at that time publicly opened. Plans and specifications are available at the office of Procurement Officer, Panama Canal Company, 21 West Street, New York 6, N. Y. Deposit of $40.00 required.

Bids: January 6, 1955

Construction of Bridge

SEALED PROPOSALS will be received by the undersigned, acting for Lehigh County and the City of Allentown, at his office in the Lehigh County Court House Annex Bldg., Allentown, Pa., for the construction of a new bridge, with approaches, and Lawrence Street overpass, leading from South 15th Street to Wyoming Street, via Ward Street, Allentown, Pa., until 11:00 o'clock A.M. (E.S.T.) January 6, 1955 and publicly opened after 11:15 o'clock A.M. (E.S.T.) of the same day in the office of the County Commissioners.

Copies of plans, specifications and proposal forms may be obtained at the Office of G. Edwin Pidcock Co., Consulting Engineers, B. & B. Building 546-548 Hamilton St., Allentown, Pa., upon payment of Two Hundred Dollars ($200.00) for each set. Any Bidder, upon returning such set in good condition within ten (10) days after the opening of the proposals will be refunded One Hundred Fifty Dollars ($150.00) of his payment. If he submits no bid, only One Hundred Dollars ($100.00) of his payment will be refunded. Proposals may be submitted for any one, any two, or all three of the types of construction stated in the Proposal Forms provided.

Each Bidder must deposit with his proposal, a certified check or Surety Company's Bond in an amount of not less than five (5) percent of the base bid in the form as outlined in the "Instructions to Bidders".

Proposals must be sent in on regular forms prepared by the Consulting Engineers, in an envelope properly identified, and in the hands of the County Controller at or before the time above mentioned.

No Bidder may withdraw his proposal within fifteen (15) days after the actual date of the opening thereof.

The Board of Commissioners of Lehigh County, reserves the right to waive any informalities in, or to reject any or all proposals.

Alan F. Weinsheimer,
County Controller

U. S. Government

Department of Commerce, Bureau of Public Roads, November 17, 1954. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m. E.S.T., DECEMBER 16, 1954, for Project 1A4B6, Shenandoah National Park, Rappahannock, Page and Madison Counties, Virginia. 12.965 miles paving and other work from Thornton Gap to Crescent Rock. The approximate quantity of the principal item is 28,740 tons Type H-1 Asphalt Pavement, Liquefier Type. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above or Bureau of Public Roads, 920 South Jefferson Street, Roanoke, Virginia. H. J. Speiman, Division Engineer.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4296) will be received at Stockton, Kansas, until December 29, 1954, for furnishing labor and materials for sand creek bridge and corrugated-metal pipe-arch drainage structure—county road relocation —Webster Dam—Webster Unit—Solomon Division, Kansas, Missouri River Basin Project. Location: near Webster, Kansas, in Rook County. Principal items are: 260 cu. yds. concrete; 2,100 lin. ft. furnishing and driving timber piles; 114,000 pounds, furnishing and erecting structural steel; and other work. Completion time 200 days. For particulars, address Bureau of Reclamation, Stockton, Kansas or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: December 20, 1954

Construction of 36-Inch Diameter Water Supply Main Arlington County, Virginia

Sealed proposals for furnishing all materials and equipment and doing all work required for the construction of a 36-inch diameter water supply main, as described below, will be received by the Purchasing Agent in Room 213, in the Court House Building at Arlington County, Virginia, until 11:00 A.M., E.S.T. on December 20, 1954, and there publicly opened and read immediately thereafter:

CONTRACT 2C

CONSTRUCTION OF 36-INCH DIAMETER WATER SUPPLY MAIN AND APPURTENANCES:

1. Location: The work is located in Arlington County, Va. on public streets and on County owned right-of-ways from Lee Highway to Fairfax Drive.
2. Type of Work: The principal items of work include the following:
   Approximately 5,200 lin. ft. of 36-inch steel or reinforced concrete water pipe together with manholes, 24-inch diameter, cone valves, miscellaneous gate valves, blow-off, air release or inlet valves, connections to existing water mains, etc.
3. Copies of Plans and Specifications, Information For Bidders, Bid Forms and other bidding and contract documents may be examined at the office of the Chief Engineer of the Water Division, County Court House, Arlington, Va.; at Dodge Reports, 900 F. Street, N.W., Washington, D. C., and at the Office of Alexander Potter Associates, Consulting Engineers, 50 Church Street, New York 7, N. Y.
4. Copies of Plans, Specifications and Bidding Documents may be obtained from the Purchasing Agent in Room 213, Court House Building at Arlington, Virginia, upon Deposit of Thirty ($30.00) Dollars Per Set.

Full refund will be made to actual bidders for return of One (1) Set, in good condition, within two weeks after closing date for receipt of bids; refund for return of all other sets, in good condition, within the same period, will be Fifty (50%) Percent of the Deposit. No refund will be made for return of documents in poor condition or later than the two-week period stipulated.

All bids must be on the form contained in the Contract and Specifications.

Contractors, whether resident or non-resident in Virginia will be required to show evidence of a certificate of registration as required by Chapter 7 of Title 54 of the Code of Virginia before their bids will be considered, if the bid is $20,000 or more.

All bids must be accompanied by a certified check or acceptable bidder's bond in an amount of not less than Five Percent (5%) of the amount of the bid, made payable to the Treasurer of Arlington County, as bid security.

The successful bidder will be required to furnish a Performance Bond conditioned upon the faithful performance of the Contract and upon payment of all persons supplying labor and furnishing materials on the construction of the work.

No bidder may withdraw his bid within Thirty (30) days after actual date of opening thereof.

The County Board of Arlington County, Virginia, reserves the right to reject any or all bids and to waive any informality in the bids.

ARLINGTON COUNTY, VIRGINIA
By: A. T. LUNDBERG
County Manager

U. S. Government

Department of Commerce, Bureau of Public Roads, November 18, 1954. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., E.S.T., DECEMBER 21, 1954, for Project 1D5-1E1, Colonial Parkway, James City County, Virginia. Length: 1.936 miles. The approximate quantities of the more important items are: 1,680,000 cu. yd. Hydraulic Embankments, 18,000 lin. ft. Untreated Timber Piling, 36,000 sq. ft. Untreated Timber Sheet Piling and 34,000 sq. ft. Treated Timber Sheet Piling. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above or Bureau of Public Roads, 920 South Jefferson Street, Roanoke, Virginia. H. J. Speiman, Division Engineer.

OFFICIAL PROPOSALS

Bids: December 28, 1954

New Jersey Turnpike Authority

CONTRACT NO. N-22

Proposals are invited for Contract No. N-22 which involves the fabrication and erection of superstructure steelwork for the East Viaduct, extending from its West Abutment just west of Communipaw Avenue, to Pier 1 of the West Viaduct just north of Grand Street, in Jersey City, Hudson County, New Jersey, and other incidental work, all in connection with the construction of the Newark Bay-Hudson County Extension of the New Jersey Turnpike.

The Principal items of work include:

Structural Silicon Steel	3,700,000 Lbs.
Structural Carbon Steel	16,350,000 Lin. Ft.
Furnishing Metal Railing	9,480 Lin. Ft.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 O'Clock Eastern Standard Time on the morning of December 28, 1954, at which time and place said proposals will be publicly opened and read.

Bidders must submit with their proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after November 29, 1954, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, New York. Contract documents will be furnished upon payment of Fifteen Dollars ($15.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

November 26, 1954

Bids: December 28, 1954

New Jersey Turnpike Authority

CONTRACT NO. N-13

Proposals are invited for Contract No. N-13 which involves the construction of two (2) main abutments with twenty-seven (27) intervening piers, together with one (1) abutment and five (5) piers for a connecting ramp, and other incidental work, for the Southeast Viaduct extending from the Avenue E Interchange to the vicinity of Brown Place in Jersey City, Hudson County, New Jersey, all in connection with the construction of the Newark Bay-Hudson County Extension of the New Jersey Turnpike.

The principal items of work include:

Open Foundation Excavation	12,150 Cu. Yds.
Treated Timber Piles	38,000 Lin. Ft.
Steel Piles	5,200 Lin. Ft.
Concrete	15,400 Cu. Yds.
Reinforcement Steel	1,500,000 Lbs.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 O'Clock Eastern Standard Time on the morning of December 28, 1954, at which time and place said proposals will be publicly opened and read.

Each bidder must submit with his proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after November 29, 1954, at the office of the Authority and at the office of the Consulting Engineer, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, New York. Contract documents will be furnished upon payment of Fifteen Dollars ($15.00) for each set, upon application to the Authority. Contract documents are not required to be returned, and payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

November 26, 1954

OFFICIAL PROPOSALS

Bids: December 14, 1954

State of New Jersey State Highway Department Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE S-4B (1927) ROUTE 208 (1953), SEC. 1-C

Route S-4B (1927) Route 208 (1953), Section 1-C, Underpass Bridge & Approaches at Maple Avenue and Lincoln Avenue, Boroughs of Fair Lawn and Glen Rock, Bergen County, and Borough of Hawthorne, Passaic County, Federal Project No. U-189(5). Length 0.284 miles. The principal items of work are:

Estimated:

	Roadway Items
26,000 cu. yds.	Roadway Excavation-Unclassified
8,524 sq. yds.	Macadam Base Course, 4" & 8" thick
1,442 sq. yds.	Pen. Macadam Surface, Hot Application, 3" thick
8,195 sq. yds.	Pavement Type MA-BC-1 and 2
850 lin. ft.	12" Clay Pipe Sanitary Sewer
1,110 lin. ft.	Reinforced Concrete Culvert Pipe
30	Inlets and Manholes
3,222 lin. ft.	White Concrete Vertical Curb
	Bridge Items
598 cu. yds.	Class B Concrete in Structures
2,280 cu. yds.	Class C Concrete in Structures
600 lin. ft.	Steel Bearing Piles
239,850 lbs.	Reinforcement Steel in Structures
459,000 lbs.	Structural Steel

Bids for the above will be received at the office of the State Highway department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, December 14, 1954, at TEN o'clock (10:00 A. M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P. L. 413, 82nd Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 222 Broadway, Paterson, New Jersey, and 43 Hudson Street, Ridgewood, New Jersey. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished upon payment of a fee of Ten Dollars ($10.00) which will not be refunded for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway

(Continued on opposite page)

Read the Official Proposal Columns of ENGINEERING NEWS-RECORD This Week and Every Week

OFFICIAL PROPOSALS

(Continued from opposite page)

specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Bids: December 15, 1954

State of Rhode Island and Providence Plantations Department of Administration Division of Purchases

NOTICE TO ROAD AND BRIDGE CONTRACTORS

Sealed Proposals enclosed in separate envelopes clearly endorsed with the contract number and project designation and addressed to the Division of Purchases, for the construction of the following project will be received by the Division of Purchases at the office of the State Purchasing Agent, Room 123, State House, Smith Street, Providence, Rhode Island, until 11:30 A.M.E.S.T. on the 15th day of December 1954, at which time they will be opened and read in public.

R. I. Contract No. 5455, R. I. Federal-Aid Project No. UI-1-03(3), Construction Contract One, County of Providence, North-South Freeway, Providence, Rhode Island. Construction consists of piers for the Providence River Bridge and the South Water Street on-ramp, bulkhead and other walls, and abutment; together with excavation, waterfront embankments and repairs, riprap, drainage facilities, and all other appurtenantnant parts of the work.

Bids for the above work must be made on blanks furnished by the Department of Public Works, Division of Roads and Bridges. Plans, Specifications and Special Provisions may be examined at Room 123 State House or Room 232 State Office Building, Providence, Rhode Island, on and after November 24, 1954 every week day except Saturdays and Holidays, between the hours of 8:30 A. M. and 4:30 P. M. Blanks for submitting Proposals may be obtained through the office of the State Purchasing Agent at 123 State House. A deposit of $100.00 shall be made for each set of Contract Documents which will be refunded if Plans and Specifications are returned in good condition within two weeks after the opening of Bids.

A certified check or Bid Bond payable to the State of Rhode Island, or cash, in the amount of $55,000.00 must be furnished by each Bidder.

Proposal Guaranty will be returned after the Contract has been executed unless forfeited in accordance with the stipulations in the Proposal.

A Performance Bond of one hundred (100) percent of the contract price with a satisfactory surety company will be required of the successful Bidder. The Division of Purchases reserves the right to reject any or all bids.

FEDERAL REQUIRED CONTRACT PROVISIONS: The attention of prospective bidders is called to the fact that this project is to be bid upon and the Contract executed under the rules and regulations for carrying out the provisions of the Federal-Aid Highway Act of 1944 and the Special Provisions, dated July 2, 1948, as amended and supplemented, as required by the Department of Commerce, Bureau of Public Roads.

EMPLOYMENT LISTS: A local employment service has been designated by the R. I. Employment Service to prepare the employment lists for the project. Requests for men to be employed on this project shall be submitted to the District Office at 24 Mason Street, Providence, Rhode Island.

WAGES OF LABOR: In conformity with the provisions of Chapter 290 and 291, General Laws, 1938, the minimum wages for a day's work paid craftsmen, teamsters and laborers shall not be less than the customary and prevailing rate of wages for a day's work in the same trade or occupation in the locality where the work is undertaken. Such a schedule of wages has been established on a minimum hourly basis and is on file in the office of the State Department of Labor. The Contractor shall pay not less than these minimum wage rates.

SUBLETTING OR ASSIGNING THE CONTRACT: The attention of bidders is directed to the Standard and/or Special Provisions covering subletting or assigning the Contract.

DEPARTMENT OF ADMINISTRATION
DIVISION OF PURCHASES
By Franklyn A. Adams
State Purchasing Agent

Bids: January 4, 1955

Contract LT-160.016

THE PORT OF NEW YORK AUTHORITY
LINCOLN TUNNEL
THIRD TUBE
NEW YORK PLAZA
EMERGENCY GARAGE AND PORTAL FINISH

Sealed proposals for the construction of an emergency garage and portal finish for the Third Tube of the Lincoln Tunnel will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P. M. on Tuesday, January 4, 1955, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to theTreasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of the documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, December 2, 1954

Bids: December 30, 1954

New Jersey Turnpike Authority

CONTRACT NO. N-15

Proposals are invited for Contract No. N-15 which involves the construction of the substructure units for five (5) bridge structures, extending from Linden Avenue to the Central Railroad of New Jersey crossing at Phillip Street, in Jersey City, Hudson County, New Jersey, all in connection with the construction of the Newark Bay-Hudson County Extension of the New Jersey Turnpike.

The principal items of work include:

Open Foundation Excavation	13,800 Cu. Yds.
Untreated Timber Piles	26,000 Lin. Ft.
Treated Timber Piles	2,800 Lin. Ft.
Steel Piles	60,000 Lin. Ft.
Concrete	16,000 Cu. Yds.
Reinforcement Steel	1,030,000 Lbs.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 O'Clock Eastern Standard Time on the morning of December 30, 1954, at which time and place said proposals will be publicly opened and read.

Bidders must submit with their proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after December 2, 1954, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, New York. Contract documents will be furnished upon payment of Fifteen Dollars ($15.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

November 30, 1954

Bids: December 14, 1954

State of New Jersey State Highway Department Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

PEDESTRIAN BRIDGES—ROUTE U. S. 46, SEC. 7

Construction of two Pedestrian Bridges over Rout U. S. 46, Section 7, at Keasler Avenue in Borough of Lodi, and Bank Street in Borough of East Paterson, Bergen County. The principal items of construction are:

Estimated:

174	cu. yds. Concrete in Structures
6,750	lbs. Reinforcement Steel
48,960	lbs. Structural Steel
6	M.B.M. Treated Timber
478	lin. ft. Woven Wire Fence
212	lin. ft. Pipe Railing
200	sq. yds. 4" concrete Sidewalk
505	lin. ft. White Concrete Curb
200	sq. yds. White Concrete Island Pavement

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Tuesday, December 14, 1954, at TEN o'clock (10:00 A. M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

Drawings specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished upon payment of a fee of Ten Dollars ($10.00) which will not be refunded for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the [illegible] proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

U. S. Government

Department of Commerce, Bureau of Public Roads, November 18, 1954. SEALED BIDS will be received at the office of the Bureau of Public Roads, Room 6006, General Services Building, Washington 25, D. C., until 11:00 A.M., E.S.T. December 23, 1954, for construction of Project R-3, Rama Road in the Republic of Nicaragua, 19.577 Kilometers (12.138 miles) Grading, Draining, Borrow Base Course, Bridges and other work from Villa Somoza easterly, Republic of Nicaragua. The approximate quantities of the more important items are as follows: 580,000 cubic meters Excavation; 41,500 cubic meters Selected Borrow Base Course; 1700 cubic yards Class A Concrete; 200 tons Reinforcing and Structural Steel; 4570 lin. ft. metal culverts; Special conditions of work as performed by U. S. Government in foreign areas apply as well as local laws. Plans, Specifications and Proposal Forms are available upon request at the address given above or Bureau of Public Roads, 516 Roosevelt Avenue, Managua, Nicaragua. F. V. du Pont, Commissioner

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Recruiting Supervisor, Box 30

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BRIDGE—HIGHWAY Engineers—Designers—Draftsmen. For work on bridges, expressways and turnpikes. Location Midwest. Permanent positions with periodic promotions depending on experience and ability. Paid vacations, sick leave, hospitalization and life insurance. Include education, experience, reference and salary expected in application letter. P-4280, Engineering News-Record.

ESTIMATOR—EXPERIENCED to take off and price structural steel and miscellaneous iron work for buildings and bridges, by progressive firm in Eastern Virginia doing 8 to 10,000 ton yearly. Pleasant working conditions in modern air conditioned office. P-4519, Engineering News-Record.

WANTED: ASSISTANT to Director of young and progressive Southern Port. Engineering degree and administrative training essential. Please give complete history, education, experience, age, family data, salary expected and availability by addressing Box P-4493, Engineering News-Record.

WANTED SANITARY engineer with several years experience by technical and educational association located in the Middle West. Some travel required. Reply giving resume of experience, education, salary expected and references. P-4636, Engineering News-Record.

INSTRUCTOR, CIVIL Engineering New York City area salary $250-$300 per month start February 1. P-4646, Engineering News-Record.

CHIEF ENGINEER with substantial process experience in petroleum and chemicals for Chicago based contractor. Furnish qualifications, experience, salary, availability, etc. P-4724, Engineering News-Record.

CIVIL ENGINEER to work for large electric power utility on transmission line layout and design. Experience preferred. Age up to 35. Some travel required. Give resume of education, experience and references. P-4722, Engineering News-Record.

WANTED: YOUNG engineer to do design and layout work for precast products plant in Central Pa., now entering pre-stress to keep abreast of present day precast and prestress designs. P-4707, Engineering News-Record.

CONSTRUCTION ASSISTANT to superintendent: experienced assist construction superintendent public schools New York City area. Send complete resume. P-4671, Engineering News-Record.

EXPERIENCED ELECTRICAL Engineer trained in construction, repairs, maintenance, etc. Good opportunity. References. P-4742, Engineering News-Record.

(Continued on opposite page)

YOUNG AGGRESSIVE SALES ENGINEER

With concrete pipe manufacturing background. This is an excellent opportunity for top-notch man possessing engineering experience and sales ability. Must have the technical knowledge to negotiate with consulting engineers and sell them on the use of a proven product. Territory is the South and Southeast. Reply fully, giving age, experience, education and salary requirements, to

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WANTED

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P-4662, Engineering News-Record
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P-4730, Engineering News-Record
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Middle Atlantic Division of large company has openings for sales engineers in Baltimore, Boston and Harrisburg, Pa. to handle promotion and sale of fabricated metal products to engineering and construction markets. Ages 24 to 30. Engineering degree necessary.

P-4753, Engineering News-Record
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P-4618, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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(Continued from opposite page)

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WANTED ENGINEERS, Designers, Draftsmen-Structural, Architectural, M.E., C.E., E.E., and Ind., also Teachers and Chemists, Cleveland Engineering Agency, 2132 E. 9, Cleveland.

SEARCHLIGHT SECTION

This index is published as a convenience to the reader. Every care is taken to make it accurate but SEARCHLIGHT SECTION assumes no responsibility for errors or omissions.

Acme Equipment Co. 94
Albert Pipe Supply Co., Inc. 94
Ambursen Dam Co., Inc. 94
Arabian American Oil Co. 92
Azola Co., Inc., J. R. 96

Bement Equipment Co., H. D. 94
Bixby Inc., R. W. 92
Boyer, R. H. 95
Buff 98

California Division of Highways 92
Coast Equipment Co. 95
Clemens Construction Co. 96
Columbia Construction Co., Inc. 94
Construction Improvements Ltd. 97
Contractors Machinery Co. 94, 97

Dallavia Co., The 93
Darien 95
Deatherage & Son Inc., Geo. E. 93
Drachman Steel Corp., Hy 95

Fehrs Tractor & Equipment Co., Inc. .. 96
Forsythe Equipment Co., Inc. 95, 96
Foster Co., L. B. 97
Frank, M. K. 96
Frantz Equipment Co. 96
Frazier-Davis Construction Corp. ... 94, 96
Furnival Machinery Co. 95

Gillis & Co. 96
Greenpoint Iron & Pipe Co. 94
Greensburg Machine Co. 95
Gurley, W. & L. E. 98

Hickerson, Roy D. 98
Holmes-Talcott 96

Liquidators Sales Co. 97

McCarrick Brothers 94
McDonough Construction Co. of Georgia 96
McMeekin Construction Co. 93
Midwest Steel Corp. 96
Mississippi Valley Equipment Corp. 95, 97
Montgomery Mfg. Co. 92
Morrison Railway Supply Co. 96

National Blue Print Co. 98

Schoonmaker Co., Inc., A. G. 95
Sheaf & Co., George 97
Sherman Transfer Co., Roger 96
Stanhope Inc., R. C. 97
Stone the Crane Man 96

Tagco, Inc. 94
Tamblyn System 93

Warren-Knight Co. 98
Weiss Co., B. M. 95
White Co., David 98
Wikstrom Inc., A. S. 95
Williams Construction Co. 93, 96
Wilson Engineering Co. 93

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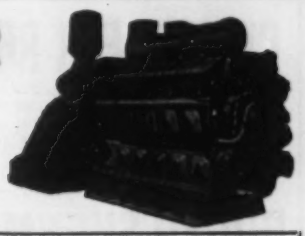

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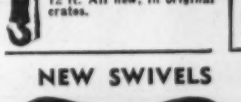

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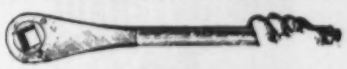

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Acker Drill Co. 70
American Air Filter Co. 27
American Creosoting Co. 85
American Steel Dredge Co., Inc. 86
Armco Drainage & Metal Products, Inc. ..... 2nd Cover
Atlantic Steel Corp. 88
Atlas Powder Co. 55
Austin-Western Co. 71

Barber-Greene Company 52
Belmont Iron Works 86
Besser Mfg. Co. 43
Bethlehem Steel Co. 6
Byers Co., A. M. 82

Cement Gun Company 56
Chapman Valve & Mfg. Co. 20
Chicago Pneumatic Tool Co. 61
Concrete Grinding Corp. 64
Construction Machinery Co. 73
Cotta Transmission Co. 52

Deming Co., The 32
Dicalite Div., Great Lakes Carbon Corp. 44
Dudgeon, Inc., Richard 60
Economy Forms Corp. 54

Eimco Corp., The 13
Fairbanks-Morse Co. ..... 3rd Cover
Franki Foundation Co. 12

Griffin Wellpoint Corporation 76
Gunite Concrete & Construction Co. 64

Harnischfeger Corporation 1
Hayward Company 53
Hough Co., Frank G. 74

Imperial Pencil Tracing Cloth 88
Insurance Co. of North America 68
International Harvester Co. (Trucks) 87
Ironite Co. 84
Irving Subway Grating Co. 2

Kern Instrument Co. 28
Kerrigan Iron Works, Inc. 42
Kinnear Mfg. Co. 76

Larsen Products Corp. 53
Leach Corp. 80
Lee & Son, W. W. 86
Levco Corp. 72
Liberty Mutual Insurance Co. 75
Lone Star Cement Corp. 18

MacArthur Concrete Pile Co. 64
Madsen Iron Works, Inc. 81
Mahon Co., R. C. 7
Marietta Concrete Corp. 6
McGraw-Hill Book Co. 46
McKiernan-Terry Corp. 58
Mueller Co. 9

Northwest Engineering Company 3

Page Engineering Co. 70
Peerless Pump Div., of Food Machy. Corp. 47
Pennsylvania Drilling Co. 60
Phoenix Bridge Co. 84
Pittsburgh Plate Glass Co. 77
Portland Cement Assn. 67
Powder Power Tool Corp. 41

Raymond Concrete Pile Co. 29
Republic Steel Corp. 78
Rockford Clutch Div., Borg Warner 56
Ryerson & Sons, Inc., Jos. T. 16

Sauerman Bros., Inc. 60
Servicised Products Corp. 99
Shell Oil Co. 4, 5
Sika Chemical Corp. 58
Smith Co., S. Morgan 59
Solvay Process Div., Allied Chem & Dye Corp. 40
Sonoco Products Co. 48, 49
Spencer, White & Prentis, Inc. 35
Sprague & Henwood, Inc. 84
Standard Dry Wall Products 65
Standard Steel Corp. 57
Sturtevant Co., P. A. 54

Texas Company 10, 11
Timken Roller Bearing Co. ..... 4th Cover
Tinney Drilling Company 58
Tube Turns Inc. 33, 34

Unit Crane & Shovel Corp. 15
U. S. Steel Corp. 50, 51
Universal Form Clamp Co. 63

Wheeling Corrugating Co. 14

Professional services **98**

SEARCHLIGHT SECTION

(Classified Advertising)

H. E. Hilty, Mgr.

Employment 92, 93
Educational 93
Notices
Proposal 89, 90, 91
Equipment
(For Rent, Sales, Wanted) 93-98

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EDITORIALS

Open Ocean Test for Construction

THOSE PLATFORMS, which the Air Force will plant in the Atlantic Ocean as part of its radar warning net, must seem like a dream coming true to those who long have been fascinated by the seadrome idea.

Seadromes got a big play in the popular science journals a quarter century ago. Aside from the difference that their legs were supposed to be supported by buoyancy tanks deep below the waves' violence, instead of on columns to the ocean bottom, the 'dromes were the schematic twins of the platforms, called Texas Towers, described in an article in these pages last week.

Realization of the dream-'drome scheme will demonstrate two propositions that the construction industry regularly finds true: (1) Scientific advances mean new jobs for construction; and (2) the industry will tackle any job that comes to it.

The ocean platform was a long time in coming to construction. But this was because the airplane quickly outdistanced any need for artificial refueling places in the ocean. It is, however, the long-flying airplane in a new role—that of an enemy bomb carrier—that has brought the ocean platform back again. Now instead of a landing field, the platform will accommodate radar equipment to flash advance warning of the approach of an enemy. It is the scientific advance represented here which has furnished construction with a new job.

We already have some proof that the industry is willing and able to do the new job. Last week we were taken backstage and shown the pioneer planning that has gone into Texas Towers. Like all pioneering, this work pushed back frontiers. The planners had some knowledge of ocean forces; they extrapolated for more. They knew how float-in, lift-up platforms work in less troubled waters, and invented techniques for the more severe conditions of the open ocean.

Detail design now is under way. Soon contractors will be asked to bid, and we have little doubt that they will be found willing—and able—to push the dream all the way through to reality. Then construction in the open ocean will take its place with other achievements of the engineer and construction man.

De-Slumming Our Cities

BY WHATEVER NAME it is called—urban renewal is the latest, urban redevelopment was its predecessor and slum clearance was the original and most definitive—the government's program to de-slum our cities is one of great promise. And while it would seem that the states have defaulted to the federal government on responsibilities that are fundamentally theirs, it is the federal participation that makes it possible to be optimistic about the outcome. Not only is the federal government to furnish the bulk of the financing, but it has laid down strict rules of eligibility for its loans and grants that foster civic improvements of a truly integrated sort, which is just what has been needed.

When slum clearance first began to be promoted, the focus was almost entirely on public housing. Parks, playgrounds, new street patterns, modernized utility layouts were talked about, but too seldom provided for. And plans for new or remodeled private housing in slum areas were not even talked about. First the Urban Redevelopment Act of 1949 and now the Urban Renewal Act of 1954 changed this narrow concept, giving slum clearance a new attraction by making it the beginning for new developments of many kinds.

The fact that 200 cities have already sponsored projects, as reported last week (ENR Nov. 25, p. 15), is indicative of what can be expected. With the broadening of participation to permit private capital to invest in the redevelopment schemes, the possibilities are commensurately enlarged. And by requiring modern housing ordinances, efficient street patterns, far-seeing land-use plans and revamped utility layouts, the new slum clearance program offers a firm base for resurrecting the blighted cores of cities, large and small.

De-slumming of our cities is long overdue, and with this new concept of public condemnation and clearance, followed by either public or private redevelopment, success may finally be within our grasp. It offers the best opportunity yet to remold our cities to a pattern that modern living demands.

Saner Bridge Clearances

BRIDGE ENGINEERS of railroad companies and the state highway departments must have heaved a deep sigh of relief when they read that a special report to the Commerce Department on bridge clearances recommends lower clearances on some bridges over navigable streams (ENR Nov. 4, p. 26). There never has been much logic in the clearance requirements set up in the past for bridges over hundreds of minor waterways in this country. As a result, the cost of providing needlessly high clearances must have run into hundreds of millions of dollars.

The current report originated in a request from one of the task forces of the Hoover Commission. It is to be studied by all federal agencies having any authority over waterways, and then, presumably, will form the basis for recommendations by the Hoover Commission which should carry great weight with Congress.

Obviously, the recommendations of such a report cannot correct past errors, but they should be helpful in preventing the setting up of needlessly high and wide clearances when existing bridges have to be rebuilt or when new bridges must be constructed over minor navigable channels.

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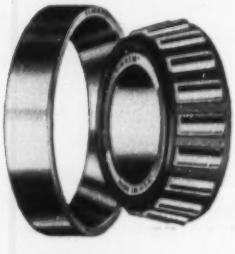

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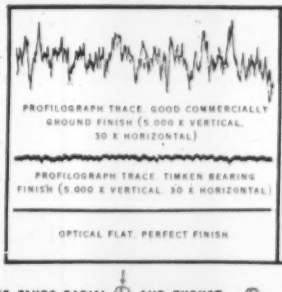
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